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POLLUTION OF INTERSTATE WATERS - POTOMAC RIVER. TRANSCRIPT OF CONFERENCE AT CHARLOTTESVILLE, VIRGINIA, 22 AUGUST 1957

Public Health Service
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TRANSCRIPT OF CONFERENCE
AT CHARLOTTESVILLE, VIRGINIA
ON
POLLUTION OF INTERSTATE WATERS — POTOMAC RIVER

AUGUST 22, 1957

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Conference at Charlottesville, Virginia
on
Pollution of Interstate Waters - Potomac River
August 22, 1957

Chairman Mr. Murray Stein

MR. ATKINS: Mr. Chairman, I think the first order of business will be introductions, and I will start.

I am C. H. Atkins, Regional Engineer of the U. S. Public Health Service, HEW, with headquarters here in Charlottesville and I think we will go right around the table on this side all away round and then round the back. (At this time those present introduced themselves as follows.)

Gebhard, Public Health Service, HEW, Region III;
Kittrell, Robert A. Taft Sanitary Engineering Center, Public Health Service, Cincinnati;
Auld, Director of Sanitary Engineering, District of Columbia;
Cary of the District of Columbia Department of Public Health;
McComas, Maryland State Department of Health;
McKee, Maryland Water Pollution Control Commission;
Robert Brown, Maryland State Health Department;
Tisdale, Potomac Commission;
Fisher, Potomac Commission;
Wieter, Public Health Service, Washington;
Stein, Public Health Service, Washington;

Atkins (continuing) and then let's go back around that way. You first, please sir.

James Keat, Baltimore Sun;

Karpen, U. S. Army;

Ostrom, U. S. Army;

John Brink, District of Columbia Health Department;

Boyce Loving, Daily Progress, Charlottesville;

Schwarz, Corps of Engineers;

John Thomas, representing National Capital Parks;

McCallum, Public Health Service;

Edelman, General Counsel's Office.

NOTE: Complete names and titles of those in attendance carried on Page 153.

Thank you, gentlemen. I saved one man to my left here, whom I have the pleasure of introducing now. As most all of you know, the Public Health Service, the U. S. Public Health Service, is a part of the Health, Education and Welfare Department. We here are in the Region III Office. This is the headquarters of the Department for this Region, and Mr. Edmund Baxter is our Regional Director for the Health, Education and Welfare Department for Region III, which includes the states of North Carolina, Virginia, West Virginia, Kentucky, Maryland, and the District of Columbia, as well as Puerto Rico and the Virgin Islands.

So, it gives me great pleasure now to call on Mr. Baxter for whatever comments he would like to make to the group.

MR. BAXTER: Thank you, Mr. Atkins. I am particularly pleased to have the opportunity to welcome this conference to Charlottesville.

We hope that you will have a pleasant stay here. We, who are now living here are very happy about being in this community. We want to invite all of you, if you have time, to visit some of the historic sights here including, of course, Monticello, the inspiring home of Mr. Jefferson. And the University of Virginia is located here. You will probably be busy, but if you do have time to visit Monticello and the University and the other places, we would be delighted to help you arrange to do so. We would be happy, also, to have you call on any members of the staff for any assistance you may need including, of course, secretarial assistance, travel assistance, or telephone service.

I would like to welcome you officially as representatives of the States, the District of Columbia, the Interstate Commission, and, of course, we don't want to fail to welcome Washington officially, such as Mr. Gordon McCallum, Chief, Water Supply and Water Pollution Control Program, Public Health Service, Washington. I also take particular pleasure in welcoming all of you as individuals. Many of you I have known for some time and whose friendship I cherish.

It is our hope that this conference may be a milestone that we can look to in years to come as one of the major steps toward abating pollution in the Washington Metropolitan Area. I think it has that promise. While it is one of the most challenging tasks we could have before us, I think the kind of cooperation that we have seen on other programs among states and with the Department of Health, Education and Welfare that the task is not by any means insurmountable; and it is one we can pursue with vigor and determination.

It seems to me that this is a highly significant project for several reasons. First, the very challenge it presents; second, it's under the spotlight of not only the Capital of the United States, but it is under the spotlight of the whole Nation. And there is also the fact that the Potomac is widely known, both currently and historically.

You can be assured, gentlemen, that this Region will work closely with you and it is our desire, as in other State-Federal programs, to help you do the job. And we will work with you as closely as possible.

Many of us, of course, have a personal as well as a professional interest in this particular program because we are former residents of the Metropolitan Area; we go there very often in the course of our work, and we visit there very often. We vacation there from time to time.

Before I close, I would like to extend my congratulations to you who have been in the sanitation field, particularly in the sanitary engineering field, for the tremendous progress that you have made in recent years. Your profession, your field of work, have come into their own in recent years. I cannot refrain from mentioning that some ten days ago I attended the Seafood Institute on Solomons Island, and I enjoyed not only the very wonderful food, which I ate with complete confidence because I think we had something like sixty seafood authorities or inspectors in attendance, and we had the dietitian of the State Department of Health of Maryland supervising the cooking. But, more important, it was an inspiring occasion because this Institute demonstrated to me how well and how effectively state agencies can work together.

We in the Federal Government take particular pride in sitting back and watching state agencies work together. We try to be of help, but we get our greatest satisfaction, not from doing the job ourselves, but being a party in some way to the kind of cooperation which we all need to get a job of this nature done.

I thank you very much.

MR. ATKINS: Thank you very much. Before we go further, are there any announcements? I hope that everybody is well situated with hotel rooms and transportationwise, but if you have any problems that we can help you with to make you more comfortable while you are here today, tonight, and tomorrow, just let us know. To reinforce what my Chief has said here, we are anxious that you be comfortable and we want to do what we can to make that so. And if you need any sightseeing trip arrangements we will be glad to help on that, too.

Does anyone have any questions or announcements to make at this time? If not, I will turn the meeting over to Murray Stein, who is Chief of the enforcement section of the Water Pollution Control Program. Murray is Chairman of this conference. The conference necessarily is quite formal in some respects, but I am hopeful that he will conduct an informal formal conference.

MR. STEIN: Thank you, that is surely our intention.

This conference, Pollution of Interstate Waters of the Potomac River in the Washington Metropolitan Area, involving the jurisdictions of the District of Columbia and Maryland and Virginia, is being held under the Federal Water Pollution Control Act and in accordance with the terms of that Act, was called by the Surgeon General of the Public Health Service.

The purpose of the conference is to bring the states, the District of Columbia, and the Interstate Commission on the Potomac River Basin, and the Public Health Service together to review the existing situation, the progress which has been made, and lay a basis for future action by all parties concerned, and give the states and localities an opportunity to take any remedial action which may be indicated under state and local law.

Under our old Act, Public Law 845, the idea of a conference was not embodied in the legislation. When our Act was up for substantial amendments in the 84th Congress, the notion of conferences of this type was proposed by representatives of the State Water Pollution Control Agencies, because they indicated that such conferences were, in fact, used by the state agencies in their daily procedures in administering state water pollution control programs, and most of them believe that if they had the law to write over again they would recommend the inclusion of this conference provision as a matter of law. And everyone seems to think that that was a good idea, including the Congress, and the idea received wide acceptance and has been a very successful device, we think, up to this time.

As a matter of fact, this is not necessarily a new idea because I have a very short quote here from a United States Supreme Court case of 1921, which is the famous case of New York and New Jersey involving interstate pollution, and the Supreme Court generally as you know confines its remarks to the case it considers and rarely makes a gratuitous remark, but in this case it just seemed to make an extra remark, and this remark was: "We cannot withhold the suggestion inspired by the consideration of this case that the grave problem of sewage disposal presented by the large and growing populations living on the shores of New York Bay is one more likely to be wisely solved by cooperative study and by conference and mutual confession on the part of representatives of the states so vitally interested in it, than by proceedings in any court, however constituted."

I think that is the spirit with which we view the conference, and I am sure most people do.

Now, under Section 8 of the Federal Act, the Surgeon General has notified the official state and interstate water pollution control agencies concerned with [illegible] matter under consideration today. These agencies are [illegible] of Columbia Department of Public Health, the Virginia [illegible] Control Board, The Maryland State Department of Health, and the Interstate Commission on the Potomac River Basin.

Under the law this is a conference between these official agencies and the Public Health Service. The official agencies, of course, are privileged to bring whomever they wish to the conference. The conferees have been designated by these agencies and the District of Columbia Department of Health has designated Mr. William Cary; the Maryland State Department of Health has designated Mr. Robert Brown; the Interstate Commission on the Potomac River Basin has designated Mr. Ellis Tisdale; and Virginia has no representation at the conference.

The Virginia State Water Control Board received an invitation to the conference in the same manner as the other official agencies named. In a letter addressed to Dr. Porterfield, dated August 2, 1957, Mr. A. H. Paessler, Executive Secretary of the Board, wrote as follows:

"This is in further reference to your letter of June 26, regarding the conference on pollution problems of the Potomac River and the Washington Metropolitan Area. We regret that in accordance with action of the Water Control Board as set forth in the attached copy of Minute 30 from the proceedings of its meeting on July 16-17, no representatives of the Board or its staff will attend the conference. We hope that a summary of the conference discussion will nevertheless be made available to the Board and its staff."

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And there was an attachment. The attachment is entitled, Minute 30, Potomac River - Washington Metropolitan Area.

A letter dated June 26, 1957, from the Department of Health, Education and Welfare to the Board stated:

"In accordance with the provisions of the Federal Act, Public Law 660, 84th Congress, a conference on pollution problems of the Potomac River - Washington Metropolitan Area is called to begin on August 22nd, 1957, at 9:00 A. M. Eastern Standard Time, at the Regional Office of the Department of Health, Education and Welfare, 700 East Jefferson Street, Charlottesville, Virginia."

Paessler's memorandum of July 15th, 1957, gave some additional information concerning the applicable section of Public Law 660, and stated the staff wished to attend this conference and to extend invitations to be present to those owners in Virginia who contribute to the pollutional load in the area. Following considerable discussion, the Board concluded that since, one, the contribution to pollution of the Potomac River from Virginia is a small fraction of the total and, two, the Virginia owners contributing to the Potomac pollutional load have taken or are taking satisfactory steps under the Virginia State Water Control law to prevent or to abate their pollution, members of the Board and its staff be directed not to attend the conference.

In response to this, in a letter to Mr. Paessler dated August 9, 1957, Dr. Theodore Bower, Assistant Surgeon General, Acting Chief of the Bureau of State Services, wrote:

"We deeply regret receiving the information contained in your letter of August 2nd, 1957, that representatives of the

Virginia State Water Control Board will not attend the conference on pollution problems of the Potomac River in the Washington Metropolitan Area to be held at Charlottesville, Virginia, on August 22nd, 1957.

"This conference has been called under provisions of Section 8 of the Federal Water Pollution Control Act, Public Law 660, 84th Congress.

"It is recognized that much progress is being made toward the solution of the pollution problem of the Potomac River. The purpose of the conference is to review this progress and future plans in the light of the needs and water uses in the Washington Metropolitan area.

"We believe the conference will prove helpful in promoting cooperative understanding and action among the official state and interstate water pollution control agencies.

"We hope the Virginia State Water Pollution Control Board might reconsider this matter and be represented at the conference."

On August 20, 1957, Mr. Edmund Baxter, Regional Director of the Department of Health, Education and Welfare, Region III, sent the following telegram to Mr. E. Blackburn Moore, Chairman of the State Water Pollution Control Board of Richmond, Virginia:

"Views of Commonwealth of Virginia and positive action of Virginia in abating Potomac pollution in Washington Metropolitan area are needed as part of the discussion and record at conference in Charlottesville on August 22nd and 23rd, called by Surgeon General, Public Health Service, under Public Law 660.

"Maryland and District of Columbia representatives will be present. Major item of discussion will be future actions for pollution abatement commensurate with the most appropriate water uses for the jurisdictions concerned."

On August 21st, 1957, Mr. Edmund Baxter, Regional Director, sent the following telegram to the Honorable Thomas B. Stanley, Governor of Virginia:

"Would welcome action by Commonwealth of Virginia to assure representation at interstate conference on abating Potomac pollution in Washington Metropolitan area.

"This conference scheduled Thursday August 22nd and Friday August 23rd in Charlottesville.

"Views of Virginia on abating Potomac pollution are needed as part of the discussion and record. Maryland and D. C. representatives are scheduled to attend. A major item of discussion will be future action for pollution abatement commensurate with the most appropriate water uses for the jurisdictions concerned.

"Similar telegram was sent yesterday to Chairman E. Blackburn Moore, State Water Control Board."

Both the State and Federal Government have responsibilities in dealingswith interstate water pollution control problems. The Federal law, that is, the Water Pollution Control Act, clearly declares, and it has always been the policy of the Public Health Service to recognize, that the states have the primary rights and responsibility for taking action to abate and correct interstate pollution.

The function of the Public Health Service is to encourage the state in these activities; however, the Public Health Service is charged by law with other specific responsibilities in connection with interstate pollution control problems.

The Federal Water Pollution Control Act provides that pollution of interstate waters which endangers the health or welfare of persons in the state other than that in which the pollution originates is subject to abatement.

When the Surgeon General believes that such pollution is occurring, he is required to call a conference of this type. That, as I have indicated, has been done. We realize that in many areas there has been considerable progress made toward the solution of interstate pollution problems by the cities, the states, and the local political subdivisions. In such cases the conference will be useful in providing a clear record delineating the progress already accomplished and indicating what still needs to be done to correct an interstate pollution problem.

Under the Federal Act, the Surgeon General is required at the conclusion of the conference to prepare a summary of the conference, which will be sent to all conferees. The summary, according to law, must include the following:

1. Occurrence of pollution of interstate waters subject to abatement under the Federal Act.

2. Adequacy of measures taken toward abatement of pollution.

3. Nature of delays, if any, being encountered in the abatement of pollution.

It is suggested that the conference be directed toward discussing these points so that we may prepare a serviceable summary at its conclusion. In addition, the Surgeon General is required to determine at the conclusion of the conference whether effective progress toward abatement of pollution is being made. To aid the Surgeon General in making this determination, it would be most helpful for the conference to agree upon a time schedule of remedial action.

Now, a word about the procedures which will govern the conduct of the conference. Mrs. Eleanor M. Christian is making the stenographic report of these proceedings for the purpose of aiding us in preparing the summary, and also providing a record of what is said and done here. It is our intention to make both the transcript of the conference and the summary available to the conferees.

An agenda has been distributed to the conferees, and I have additional copies here if you wish. The agenda is to aid us in directing our discussion toward the points required to be covered by law. The agenda does not mean that any conferee will not be able to make a complete and thorough statement of the problem, covering as many of these points as he wishes to cover in the statement. The agenda is merely a guide so that in the discussions we will be sure to cover all the points. So, if any of the conferees should make a statement, please feel free to make as complete a statement as you wish at any time.

Now, all the conferees will be called upon to make statements. At the conclusion of the conferee's statement all the other participants will be given an opportunity to make comment or ask questions, and then another conferee will be asked to make a statement. Of course, in this the conferee for the Public Health Service is Mr. Callis H. Atkins, Regional Engineer of Region III. In that way I think we can find that we can probably develop a clear statement of the problem and perhaps some agreement as to the direction of equitable solution.

Now, we have one more communication, and a relatively short one which I would like to read. This was from Mr. Harold Gray, Chairman of the Citizens Council for a Clean Potomac. In writing to me as Chairman of the conference, he states:

"As the new Chairman of this Council of Civic and Recreational Organizations from throughout the D. C., Maryland, and Virginia Metropolitan area, we wish to commend the idea of your interstate meeting on river pollution on August 22nd, and hope that the conference can arrive at solutions to the contamination problems in the Potomac River and its tributaries. This citizens' group hopes to be able to support and enact legislation that will clean up the Potomac after official groups such as yours determine the steps that are necessary in the same manner that the P. T. A. organizations support budgets and legislation that will benefit the school system. Perhaps your conference can speed the river clean-up by urging more cities to take advantage of the Federal aid that is now available for building sewage treatment plants under the Blatnik Act.

"We would appreciate receiving any summary of the meeting that may be released afterwards."

At this point I should like to call upon Mr. Callis Atkins of the Public Health Service, who will give a general presentation of the interstate pollution problem of the Potomac River in the Washington Metropolitan Area. Mr. Atkins.

MR. CALLIS ATKINS: Thank you. Pollution of the Potomac River, especially that stretch which flows through the Nation's Capital, has been of concern to all of us for a long time.

One of the first comprehensive studies of stream pollution in this country was made on the Potomac River by the Service in 1913 and 1914. The conclusion of this study was "the capacity of the river to dispose of raw sewage without nuisance or danger will eventually be over taxed" and that "primary treatment works should be installed in the near future by the District of Columbia." It was mentioned that the Nation's Capital should set an example in such matters.

Since the original survey, numerous studies have been made by the Public Health Service, Interstate Commission on the Potomac River Basin, and State and D. C. governmental agencies concerned to determine the suitability of the river in the Washington vicinity for beneficial water uses.

Those studies resulted in the conclusion that no section of the river adjacent to the District of Columbia could be considered free enough of pollution with sewage to permit its use for bathing.

In 1932, a Senate resolution directed the Public Health Service to investigate conditions resulting from the method of sewage disposal into the Potomac by the District of Columbia.

The bacterial contamination was judged to render the river unsuitable for bathing from Three Sisters Island to Fort Washington. The situation was described as critical and recommendations were made for primary treatment facilities with provisions for incorporating secondary treatment.

There is a history of continual degradation of the water quality in spite of the construction of a substantial number of interceptors and sewage treatment works. In recent years, public opinion has been focused more sharply on this problem. Some of our national leaders have termed the condition of this stretch of the Potomac a "national disgrace."

From all parts of the United States and most of the world come visitors to see the Nation's Capital, a world center. Along the river these visitors may experience disagreeable odors, observe floatage, and at some places see signs prohibiting swimming, because of pollution.

Now, it is recognized that the District of Columbia and suburban communities have spent large sums of money for pollution control works in the Metropolitan area. The water pollution control agencies of D. C., Maryland, and Virginia, and the Interstate Commission on the Potomac River Basin are concerned with the problem and are looking toward a solution. The Public Health Service is working in close cooperation with these agencies and this cooperation is being increased by Public Law 660. Under this law grants have been made for strengthening the water pollution control programs of these agencies and for the construction of pollution abatement works in the Washington, D. C. Metropolitan area.

The program grants, as distinguished from construction grants, have been made as follows, or are pending allocation:

District of Columbia, the total for the two years of $45,638.00;

Maryland, a total for the two years of $88,907.00;

Virginia, a total of $95,838.00;

The Interstate Commission on the Potomac River Basin, $40,149.00.

To date construction grant monies have been used to assist in the construction of needed sewage treatment works at Blue Plains in the District of Columbia; Rockville and Cabin John Park in Maryland - all in the Washington Metropolitan area. Additional projects are contemplated by both the District of Columbia and Maryland in this area. It is understood that Virginia is planning to use some of its construction grant funds to assist in needed projects in Fairfax and Arlington Counties.

As mentioned by the Chairman, this conference has been called in the spirit of close collaboration of federal, state, and local agencies, as well as interstate agencies, as clearly provided in Public Law 660. This law makes clear the intent of Congress to preserve the rights of states in matters of pollution abatement.

The Public Health Service has a long history of close cooperation with state agencies in matters of mutual concern, which is the expressed intent of Congress. Our policy is to work with the interstate and state water pollution control agencies in every possible way to preserve the water use potential of the Potomac River.

The objectives of this conference are, as I see them; one, to review the progress of pollution control of the Potomac in the Washington Metropolitan Area; two, to analyze trends in the amount of pollution discharged; three, assess the effects of this pollution on water uses; and, four, formulate or review plans for corrective action. This, of course, involves agreement as to stream uses in and below Washington and consideration of the anticipated costs and resultant benefits.

It is not unrealistic to anticipate that this group will formulate a mutually agreeable schedule for pollution control. This schedule should provide for improving the quality of the river water to enable appropriate future uses in spite of the rapidly increasing amounts of pollutants originating in the Metropolitan area.

Such a schedule, with the estimated costs and resultant water usage, should serve as the basis for public decisions on making provisions for its implementation.

Now, this presentation has included something on the history of the water pollution problem and the objectives of this conference. It now seems appropriate that we consider available information on the sources and the amounts of pollution and the effects on the river water.

Mr. Francis W. Kittrell of the Public Health Service has made a study of the information available on this subject, and he will now complete the Public Health Service presentation on the problem.

THE CHAIRMAN: Before Mr. Kittrell starts, Mr. Kittrell is going to speak from a document entitled "A Review of Interstate Pollution, The Potomac River in the Washington Metropolitan Area." Report dated June 1957. I should like to have this marked as Exhibit FC-1.

NOTE: Above mentioned report now marked Exhibit FC-1.

MR. FRANCIS W. KITTRELL, Public Health Service:

Mr. Atkins has just given us some background information on the status of pollution in the Potomac River in the Washington Metropolitan area. I have one chart here that I think shows very clearly what has led up to the present condition in the Potomac River Basin. This is a chart of sewage population growth since about 1913, which was the first report of this situation by the Public Health Service.

The top line and the top line beyond (illustrating on chart) is the trend of sewage population growth in the Washington Metropolitan area since 1913; or in 44 years the sewage population has increased from about 320,000 in 1913 to about 1,700,000 in 1957. The lower line, which starts around 1932, shows the load of sewage pollution going to the Potmac River, the difference between the two lines representing the amount of pollution removed by treatment.

And we can see that in spite of the fact that there has been considerable provision of sewage treatment in the area, which at present reduces the total load about 32%, the trend still has been upward, in spite of all that has been done to reduce pollution. Since 1913 the sewage population has increased some 425% in a matter of 44 years. This is a tremendous rate of growth and is a basic reason for the difficulties that have been encountered. The population growth has been far more rapid than any predictions made in earlier years have anticipated.

The increase in sewage load to the streams since 1913 has been about 250%.

But, before we go too deeply into that, it might be well to establish what the uses of water are in the Potomac River in the Washington Metropolitan Area.

The Potomac is principally important to the Washington area in the section that we are talking about, which does not involve the Washington water supply, since this is above Great Falls and not involved in the area where the pollution that we are referring to exists. But, in the area that we are concerned with, from about Three Sisters Island on down to at least Hollowing Point, the most important use of the river appears to be recreation.

Of the recreational uses, the scenic value of the river is extremely important. This may not occur to most of us as an extremely valuable use, but I think if you would imagine the Potomac River in the Washington Metropolitan area without the broad expanse of the Potomac at its doorstep and imagine it set down in some area where there was no comparable body of water, I think you would appreciate the importance of the scenic values of the Potomac.

Other important uses, recreational uses, is the water front use which involves picnicking, sightseeing, water sports, and commercial eating establishments.

The pleasure of all of these recreations which are so essential to human welfare are increased by being close to or on a body of water.

Another very important use is pleasure boating. On any day during the summer there are hundreds of boats on the Potomac River along the Washington waterfront.

Fishing is of some importance, but possibly not as important as some other recreational uses. But it is not uncommon at all to see the banks of the river in certain areas lined with fishermen. The river is also important as a means of passage for fish going upstream to spawn, and there is quite a bit of spawning in the area tributary to the Potomac.

Swimming is not an important use, because of the public's knowledge of the pollution of the river, and also because the river is not physically suitable for swimming to any great extent.

The river is important to the Metropolitan area from the standpoint of navigation. As I have stated before, it is not used particularly as a source of water supply in the area we are dealing with. It is, of course, absolutely essential to Washington above Great Falls where the water supply is taken from.

Another extremely important use is that of waste disposal. The river receives all the liquid waste from the Washington Metropolitan area and assimilates it - I won't say satisfactorily, but it at least takes it away, after a fashion.

Then, let's look at some of the details of the waste loads entering the Potomac River. There are five principal jurisdictions discharging waste to the Potomac River in the Washington Metropolitan area.

These are the District of Columbia; Washington Suburban Sanitary District, the waste from which enters the river through sewer and treatment plants of the District of Columbia; Alexandria, Virginia; Arlington County, Virginia; and Fairfax County, Virginia. There are other minor sources: The Pentagon discharges about two-tenths of 1% of the total load entering the Potomac River; Fort Belvoir, nearly 1 1/2% of the pollution load entering the Potomac.

There are a few small communities on small streams, tributaries to the Potomac, but it is not believed that pollution from these sources reach the Potomac in any significant quantities.

The breakdown, with respect to the major sources contributing to pollution, shows that Washington, D. C. constitutes 75% of the sewered population in the area. This includes the Washington Suburban Sanitary District sewered population, which is about one-third of the total, or the 75% figure I have just referred to. This 75% of the total sewered population is reduced 25% by treatment at the District's Blue Plains Plant, and as a result of the treatment, 83% of the total sewage load going to the river comes from the Washington Blue Plains Plant. Although that represents 75% of the sewered population, it discharges 83% of the total load to the river.

Alexandria represents 6.4% of the sewered population and discharges 3.3% of the total load to the river. Alexandria provides 64% reduction of its sewage load.

Arlington County represents 10.6% of the sewered population. It provides 42% reductionof the strength of the sewage and discharges 9% of the total load to the river.

Fairfax County has 5.2% of the sewered population; it reduces its sewage strength by 57% and discharges 3.3% of the total load to the river.

Thus far I have been talking of treated sewage, which means that all of the major contributors now provide treatment. There is another type of sewage discharge, which is not a regular thing but which is quite important in the problem, and that is the discharge of raw sewage on occasion from certain locations in the area. This raw sewage discharge results from any one or more of several different types of devices which are normal to most sewage treatment systems. One is a sewage treatment plant by-pass.

Very few sewage treatment plants are designed to treat all of the volume of sewage that can reach the plants under such conditions, say, as following rains. In addition, there are times when it is necessary to close down or to by-pass part of the treatment facilities because of necessary repairs and maintenance to the sewage treatment plant.

So, most plants are provided with a by-pass to which raw sewage can be discharged around the plant and directed to the stream.

Another source of raw sewage discharge is a pumping station by-pass. Where sewers are deep in the ground the sewage must be raised to or near the surface in order to get it to sewage treatment plants or into the plants themselves. And, the pumping stations, again, are not always designed to bear all of the volume that may go to the system following rains. And so, the pumping stations are provided with by-passes which permit raw sewage to go directly to adjacent streams when the capacities of the pumping station are depleted.

A great many of our older cities in this country originally installed what are known as combined sewers, which are sewers that were large enough, or are large enough, to take not only the sanitary sewage from the areas that they serve but also the rainfall that runs off following rains. In other words, they are surface drains, surface water drains, as well as sanitary sewage drains.

And the Washington, D. C., system has about 40% of the total area served by combined sewers. It is obvious that following a rain these sewers carry tremendous quantities of water, which are so great that it would not be feasible to treat the matter with the standard type of sewage treatment plant and, therefore, storm water overflows are provided which following rains permit quantities of storm water to run off, including whatever sanitary sewage is present, to pass to adjacent streams.

A fourth source of raw sewage discharge -- I failed to mention that Alexandria, Virginia, also has a considerable portion of its sewers as combined sewers, and they also have storm water overflows.

The fourth type of raw sewage discharge is from overloaded interceptors. Interceptors are large sewers that collect sewage from smaller portions of the overall system and conduct the sewage to a central point. These usually are designed to take care of anticipated sewage resulting from increased population for many years in the future. But where a population grows rapidly interceptors frequently become overloaded and it is necessary to provide overflow devices to permit the excess sewage to go in directly to adjacent streams.

This map of the Washington Metropolitan area has shown on it some of the major areas where raw sewage overflows, and frequently does occur in the Washington Metropolitan area · I am not sure that all of you can see them, but this symbol, a circle with a cross in it denotes general areas, not specific points but general areas where such raw sewage overflow can occur.

The one farthest upstream is actually on Pimmit Run and not immediately on the Potomac River itself. Then we have numerous areas along the waterfront in the District of Columbia from Foundry Branch on down stream to about Memorial Bridge; we have some on Rock Creek; we have others on the Washington Channel; we have at least one on the Anacostia River; and, of course, the sewage treatment plants on the Virginia side also have the sewage treatment bypasses, as well as the combined sewer overflows from the City of Alexandria.

The effects of such raw sewage discharges are generally more noticeable to the public, therefore generally cause a greater complaint than is the effluent from the sewage treatment plant even though the sewage treatment plant may not be adequate to provide the necessary protection to the stream.

There are several reasons for this, one being that raw sewage produces floating materials objectionable to the sight and, in addition, raw sewage causes sludge deposits which blanket the bottom of the stream and give rise to production of odor. The raw sewage discharges frequently, because of the nature of the sewage system, are located where they are more readily observed -- the effects are more readily observed by the public and, therefore, far more public complaint can arise from a relatively small amount of raw sewage than may arise from the effluent of an inadequate sewage treatment plant.

I have so far discussed two types of waste; one, treated sewage; and two, raw sewage. There is a third type which is relatively unimportant in the Washington Metropolitan area, and this is industrial waste. In general, the effects of industrial waste are minor. They are principally localized. There are reports of a few nuisances, odor and sight, due to industrial waste discharges. These generally are pretty well localized and are not too important a part of the total problem in this area.

Having considered the sources of waste, we will go into some detail on the effects of these wastes on the river. Since 1937, the District of Columbia Blue Plains Sewage Treatment Plant has maintained a program of river sampling, most of which has been conducted, in the summer at least, on approximately a once a week basis. Samples are collected at several points on the river starting up at Three Sisters Island, and at present the sampling continues on down to Hallowing Point, which is a matter I believe of about twenty-five miles below Washington.

Samples are collected as I said, once a week during the summer period particularly, and less frequently in the winter, and are analyzed in the laboratory of the Blue Plains Plant. The results of these analyses since 1937 have very kindly been made available for the purpose of this report by the District of Columbia representatives and are the basis for most of the following charts.

The first charts deal with coliform organisms. For the benefit of those who are not too directly concerned with the technical matters involved in stream sanitation, I would like to say that coliform organisms may be thought of rather roughly as sewage bacteria.

We have taken the results of analyses for sewage bacteria made by the District of Columbia personnel and obtained averages, monthly averages, during the summer portion of each year since 1938 through 1956. These averages for each of the six months during the summer are based generally on four to five determinations. They are represented by the small open circles.

In addition to the monthly averages, we have also prepared summer averages; merely take an average of the six monthly averages. Those are represented by the closed or the dark circles.

On these charts we have also shown by a straight line across, through the point represented by the particular value involved, the maximum monthly average for each summer. I am afraid some of you in the back can't see all of these details. If anyone wishes to move up closer, I will be glad to have him do so.

In addition, on these charts, using the summer averages, which are the black points connected by the heavy solid lines, we have put through that general line a heavy dashed line indicating the trend in bacterial pollution. We have also incorporated on these charts a solid line representing the objective or water quality -- in respect to this case, coliform organism, of the Interstate Commission on the Potomac River Basin, or this particular section of the river involved.

These objectives, I might explain, are guides to shoot at rather than definitive values which must be obtained. In other words, they are objectives, or targets, agreed upon by the various agencies constituting Interstate Commission on the Potomac River Basin. And they are put on the chart to give us a basis of reference.

In addition, we have incorporated, where available, the results of bacterial examinations in previous Public Health Service Reports beginning in 1913 and going to 1932.

The first chart represents the history and the trend of bacterial pollution at Three Sisters Island, which is, as I said previously, well upstream in the District of Columbia. This shows a water of fairly good bacterial quality. It is not the best, but on the other hand, it is not extremely bad. You will note that there was a peak in pollution along about 1944, which was due to temporary discharges of sewage farther upstream than normally has occurred and this condition since has been corrected by extension of the outfall of the sewers further downstream, during this year. But, in general, the results are not too far -- the average of the results are not too far from the objectives of the Interstate Commission for this section of the river.

The next station downstream is Roosevelt Island, and here again you see the peak that occurred around the middle of the '40s, with some reduction since then, following the projection of the sewers further downstream. The water here is a little worse than it was at Three Sisters Island, but again, it is not excessively bad water.

The next station is Giesboro Point. And this begins to show the effect of sewage from the Washington metropolitan area very definitely. I might say, incidentally,-- this is a point that I should have brought out earlier -- that our scale on the left, Coliform Organisms per ml., is a semi-logarithmic scale which is necessary for the presentation of bacterial data, because if we didn't use semi-logarithmic paper we couldn't get a sheet of paper in the room high enough to show the range of bacterial results.

But, at Giesboro Point, as I said, the effect of the Washington Metropolitan area sewage begins to show up very definitely. Now, this point is well above most of the sewage discharge from the area, being a short distance below Anacostia River, and is due to the fact that tidal action in the Potomac River carries pollution upstream on the rising tide and this pollution turns and starts downstream on the falling tide, and so the sewage pollution actually is carried upstream well above the points from which it is discharged. And that is the reason that bacterial pollution starts to show up as far upstream as

First of all there was David Auld, who is the Director of Sanitary Engineering of the District of Columbia; then there was William H. Cary, Jr., who is Chief of the Bureau of Food and Public Health Engineering for the District of Columbia; John Brink, who is Public Health Engineer for the Department of Public Health, of the District of Columbia; Roy Orndorff, who is Deputy Director of Sanitary Engineering, for the District of Columbia; Henry Schilpp, a Sanitary Engineer, for the Maryland State Department of Health; representing Robert Brown; John Geyer, Professor of Sanitary Engineering at Johns Hopkins University; and Chief Engineer, E.C. Meredith of the Virginia State Department of Health was there. Then for the Corps of Engineers, John C. Smith, Chief of the Water Supply Division, Washington; and John Krasauskas, who is Chief, of Plant Operations Branch, Water Supply Division, Washington District Corps of Engineers; Edward Schmidt, Consultant, formally, of course, in charge of the Water Works for the Corps; Ralph Fuhrman, Secretary of the Federation of Sewage and Industrial Wastes Association, who worked on the river for many years when he was associated with the work on the Blue Plains plant, and made studies on the Potomac in the upper Basin; and Byron Bird, who is Chief of the Engineering Division of the Washington District Corps of Engineers; Donald Wallace, who is with the Geological Survey from Charlottesville, Virginia; and Lou Warrick, Technical

Services Consultant of Water Supply and Water Pollution Control Program of the Public Health Service, and the Director during the day's session.

Now, I want to make two or three additional comments with reference to this developing program on water quality criteria. This report which I am filing today is the result of the deliberations of this Water Committee. Its ultimate goal of a comprehensive pollution abatement program, as we are talking about here, is to provide that quality of water in the Potomac which will be compatible with the principal uses the people desire to make of it. Many uses are currently being made of the river, even though the water quality is far from desirable for many such uses. Other uses are proposed for the future, which can be realized only if pollution abatement is achieved.

It is believed that the following water quality objectives and criteria for five sections of the Potomac River in the Washington metropolitan area are capable of achievement and desirable of attainment. Some of these aspects are admittedly long-range objectives. For example, the complete removal of raw sewage must await the elimination of combined sewage and an application of practical methods of disposal of sewage and other wastes from boats. Nevertheless, the objectives are worthy goals and should be sought.

Because of the varying nature of the streams and the situations pertianing to them, no single set of water quality criteria can be made to apply to the entire metropolitan region. The portion of the Potomac under such consideration has been divided into five sections. I shall mention them and shall not attempt to give the specific physical, chemical and bacteriological criteria that are set forth in the report.

The first section is from the Mouth of the Monocacy to Great Falls; the second is from Great Falls to Little Falls, the third is from Little Falls to Key Bridge; the fourth is from Key Bridge to Fort Washington; and the fifth is from Forth Washington to Hallowing Point.

The Committee made this stipulation that Key Bridge is the present division point between sections 3 and 4, but this would be moved down stream to the vicinity of the 14th Street Bridge in Washington at the proposed Barrier Dam, if the provision for a water recreation basin is adopted as recommended in the Wolman Report entitled "A Clean Potomac River in the Washington Metropolitan Area."

One more point, as a basic consideration applying to all sections, the Commission advocated that all sewage or industrial wastes discharged or permitted to flow into tributaries of the Potomac should be treated to that extent, if any, which may be necessary to maintain such waters in a sanitary and satisfactory condition at least equal to the criteria recommended below for the waters of the Potomac immediately above the confluence of the tributary with the main stream. And then the report sets forth the water quality objectives for the specific sections. I don't think it is necessary to go into detail with respect to that at the present time.

THE CHAIRMAN: Thank you, Mr. Tisdale.

Again we should view this report as a background item for the conferees to take into consideration in formulating their specific recommendations and conclusions, and hope none of them will be incompatible with the objectives set forth here, although the objectives will be given further consideration by the various jurisdictions concerned.

Now, at this point, I think we can, before we get into the specifics of the remedial action for the various jurisdictions, I will ask if there are any questions you wish to raise concerning the summary or report of this first conference or the conclusion reached there, or the report of Professor Geyer, or the water quality objectives, the report just given by Mr. Tisdale. Are there any question on any of those items?

MR. WALKER: I have a question, Mr. Chairman. While I am personally familiar with the water quality objectives, have they been made available to the remainder of the conferees?

MR. TISDALE: I think not. We have them here.

MR. WALKER: I think we had better know more about them

THE CHAIRMAN: I think it would be productive if Mr. Tisedale would indicate what these objectives might be in more detail.

MR. TISDALE: I have a number of copies of them here-enough possibly for all of the folks here on the platform, and I would be glad to outline briefly the water quality objectives in summary fashion if that appears to be desirable.

I can comment on these various sections,but I don't them it is worth the time. I mean it would be terribly time consuming to read each one of the sections.

The water Committee report divided the metropolitan reaches of the Potomac into five sections as follows -- and I told you about those.

The Committee's requirements for Sections 1, 2 and 3 are substantially the same with respect to the physical, chemical and biological content, so that the water will be kept in suitable quality for domestic water supplies, fish propogation and full recreational use.

In Sections 2 and 3, that is, from Great Falls to Little Falls, and Little Falls to Key Bridge, the elimination of sewage and wastes effluents and excessive soil pollution is required. In technical language, the criteria for the three upstream sections are these: 1) the coliform group, the most probable number of bacteria present not to exceed 2,000 per 100 ml. 2) the pH range should be between 6.5 and 8.5. 3) the dissolved oxygen monthly median not less than 6.5 parts per million, with no dissolved oxygen below 4.0 parts per million; 4) turbidity; after opportunity for good mixing in the river, turbidity of the stream should not be appreciably changed; 5) other conditions: there shall be no floating solids, oil, settleable solids, or sludge deposits attributable to sewage, industrial wastes or other wastes; There shall be no toxic wastes, deleterious substances, colored or other wastes, or heated liquids, taste or odor producing substances, either alone or in combinations sufficient to be injurious to fish life or to make the waters unsafe or unsuitable as a source of municipal water supply or other desirable uses.

The criteria for Section 3, Little Falls to Key Bridge are perhaps worthy of special consideration and attention. The requirements for that section of the river are just as stringent as for the section above the water supply index. The recreational potentialities for this area, including swimming, are considered so important as to require full protection.

Then, the section that deals with the main part of the area, Section 4, from Key Bridge, or the 14th Street Bridge to Fort Washington, which must bear the brunt of the sewage effluent and storage drain, the major part of the metropolitan area. Here it is not considered possible to achieve water of such high quality as in the other areas. In this section, the achievable objectives are described as follows: to reduce the quantity of combined sewage discharged, and to control the quality of waste effluents by effective treatment so as to make the water suitable for boating, shore recreation, industrial water supply and safe for the passage of all species of fish, with favorable conditions prevailing for the propagation of the hardier types.

The Water Committee findings were reviewed by the Commissioners at the Potomic River Commission meeting in Richmond, and the criteria were approved for the purpose of transmitting them to Colonel Welling, and the Director was authorized to transmit these criteria to the regulatory bodies of the Basin States for their consideration and recommendation. At a future meeting of the Commission, additional consideration will be given to it with the hope that they may be either in their present form, or that some agreement can be reached among all the signatory bodies, and the ultimate objective will be that the signatory bodies will approve them and it will be the water quality criteria in the Washington area.

THE CHAIRMAN: Are there any further comments or questions.

MR. BROWN: My question is on another subject. I don't want to change the subject. The first part of this conference is adjourned until such time as we had had an opportunity to receive and review the engineering report prepared on behalf of the Interstate Commission. As a matter of understanding for us all, I should like to know what status this report bears to the deliberations of the conference today. Is it merely a matter of engineering information, or are we considering it in any other light?

THE CHAIRMAN: I am happy you brought that up if that was not clear. Of course, when this report was being written we had no notion as to the exact contents of the report. As it appears, it was published as a rather comprehensive far reaching document, and many of the aspects of that report, while thoroughly probative, were beyond the scope of the conference, or the jurisdiction of the service in its carrying out of its functions under the law. In the presentation of the report, I think, though, there are certain general areas -- problem areas -- standing out, and certain suggested solutions, and I think those folks who have read the report are familiar with them.

What we would suggest is that for the limited purpose that we have gathered together here, we try to develop recommendations and conclusions and action which would not be incompatible with the purpose of the report. I think that if any of the specific suggestions that come out of this conference would be such so that they would be incompatible with that report, then the report would be pertinent, but I think we would be within the scope of what we are trying to do, if our recommendations here could be fitted into the objectives of that engineering report.

Does that answer your question, Mr. Brown?

MR. BROWN: I am satisfied if the remainder of the conferees are.

THE CHAIRMAN: Now, are there any further comments or questions?

MR. AULD: It still seems to put us in the position of avoiding suggesting anything which may be incompatible.

THE CHAIRMAN: I didn't suggest that, Mr. Auld. I don't think you can draw any such implications. I think we were told that the report may raise some controversial areas which go beyond the scope of what we are doing, but I think it is clear that if our recommendations here would stand independently as recommendations of this conference -- if those recommendations are made and are not inconsistent with the report -- then there is no problem. If they are, and someone wants to bring that up as a point in discussing these recommendations, I think that would be pertinent. I don't think we would want to imply either endorsement of the report or adverse criticism of it in any way at this meeting. It is just, in a sense, an informational item which is available for use if you think it is pertinent in any of the discussions.

MR. AULD: Thank you.

THE CHAIRMAN: Now, at this point are there any comments from anyone?

I see representatives from the Surgeon General of the Army in the audience. I know that the people at Fort Belvoir are vitally interested in the Potomac. First they are interested in it as a potential source of water supply, and secondly, of course, they are interested in it as a recreational area. You can see the tremendous interest, from looking at the map, of Fort Belvoir Military Reservation, in the Potomac River.

At this point I would like to give these representatives an opportunity to make any comments or statements they might wish with regard to that.

COLONEL KARFEN: As a representative of the Surgeon General of the Army, Mr. Chairman, I have with me Captain Ostrum, who has been in charge of the work which is being discussed at Fort Belvoir.

I would like to call on Captain Ostrum for his specific findings.

CAPTAIN OSTRUM: Our problem at Fort Belvoir has been one of the expanding metropolitan area on our water shed which is Accotnik Creek. We have been forced to find a new water supply for the post, and have turned to the Potomac River. This seemed at the outset to be a possible choice to us, but what we heard in Charlottesville in August was not too encouraging, nor were the drought conditions, nor the analysis of data provided to us by the Johns Hopkins University and other sources.

We are concerned with, first of all, the solidity problem, secondly, the problem of biological growths. This Summer we notices that detergents could be a possible source of trouble to us in designing the treatment plant.

We hope that in this conference, the representatives of the agencies will be able to point out to us any prospects in the future of using the Potomac as a primary source,though in drought conditions, due to excessive solidity, we have to go over to a secondary source.

Will the Potomac be suitable for use as a recreational and training area? The engineering school is situated there and every Summer and Winter tremendous numbers of trainees and reserve National Guard's men conduct exercises, both on and, unfortunately, in the water.

Those are the points we hope to have clarified to us: its possibilities for use as a water supply and a training area.

THE CHAIRMAN: Thank you Captain.

Are there any further questions?

(No response.)

Well, at this point I would like to read a telegram we have received from the Citizens' Council for a Clean Potomac, and it says: "In the absense of our Chairman, Mr. Harlan Gray, we wish to express our interest in the second conference to be held regarding pollution of interstate waters of the Potomac River. All associations and individual members are deeply concerned in seeing a target date set for remedial construction work on the improvement of the River throughout the metropolitan area. We are pleased to know that all States concerned, are now cooperating in this objective which should result in greater improvements for our National capital. You have our fullest support in planning this program." And that is signed Richard A. Willis, Treasurer Citizens' Council for a Clean Potomac.

This is largely for the purpose of the record and directed at Virginia to discuss, if they would -- I wonder if the representatives of the State Water Control Board have had an opportunity to read the summary of the first conference and the report prepared by the Public Health Service describing the conditions of pollution in the Washington Metropolitan Area -- and if they would care to make any comment on this at this time?

MR. WALKER: Mr. Chairman, I have not read that report in detail. I don't think I have seen the conclusions to which you referred. I notice from the report that it indicates for instance that the treatment now provided by the City of Alexandria is inadequate. Does your report detail the inadequancies to which you refer?

THE CHAIRMAN: I don't think that the report details that the treatment provided by Alexandria is inadequate. I think what the report does say is that the treated or partially treated sewage from these various areas contributes to pollution. Now even with secondary treatment, thereis something which goes through the stream.

I think in the discussion here today, it might very well be that any specific location or specific locality will be considered to be providing adequate treatment under the circumstances. I don't think there should be any implication from the report,at this stage at any rate, that Alexandria or any other community in Virginia, after the discussion, is necessarily not providing adequate treatment.

MR. WALKER: I wanted to clear that point, because we feel in Virginia we have been far ahead of the District of Columbia in cleaning up this area, and I think the facts will show that.

THE CHAIRMAN: Are there any other comments? We were interested in the comments on the conclusions reached on interference with water uses, and the condition and uses of the river.

Mr. Paessler, do you have any comment to make. I am not entirely sure of what you mean.

MR. PAESSLER: These conclusions are necessarily general. I think there is some wording in these conclusions that I would take exception to, but, as they stand, generally, I think that with clarification that has just been made, that we have no further comments.

THE CHAIRMAN: Thank you, Mr. Paessler.

I think if we may look at these conclusions, or the purpose of the second session of the conference, I think we may read it as such, in dealing with the time schedule for completing financial arrangements, plans and specifications and letting of construction contracts for the remedial work to be done by Alexandria, Virginia, Arlington County, Virginia, Fairfax County, Virginia, we should necessarily say, if any is needed, and I think that would apply to all the jurisdictions we have in mind here.

Now, it very well may be that in a specific area, or in a variety of special areas, we made conclude that this is not reached. I would rather not get into specifics now, because I think we do have somewhat of a problem,with which I think we are all aware.

Because of the various ways which Washington works, this just happens to be appropriation time. That means that just today many Public Health officials and many of the District officials are on Capitol Hill presenting budget material. Now, before we get to specifications, we should like to give these folks an opportunity to come back and be here if possible, and that is why in this conference we have not pushed ahead as rapidly as we have in some of the others, in covering ground this morning, and have taken a considerable amount of time to deal with the background material.

At this point, if it is agreeable to all concerned, I would suggest that the second session of this conference stand adjourned until a quarter to two p.m., and that at that time we will discuss the items on the agenda dealing with specifications -- that is item 4 on the agenda "Plans for Specific Remedial Action." That will include the District of Columbia, Virginia, Maryland, and the responsibility of the Federal Government. Then we will have a summary

Mr. Brown?

MR. BROWN: I want to inquire of the purpose for such extensive adjournment, Mr. Chairman.

THE CHAIRMAN: I withdraw that suggestion. The reason for the extensive adjournment was to permit some folks to complete their business on Capitol Hill, and have a chance to come to the conference, but I think in view of the uncertainty of that, and the reaction that the suggestion created, I think we will go on, and at this point, I would like to call upon the District of Columbia representative to outline plans for specific remedial action in the Washington metropolitan area.

MR. ATKINS: Before you go ahead, if I may interrupt, do you propose to change the summary of the last conference. That is no clear to me.

THE CHAIRMAN: Mr. Atkins, I think that,by inference, it can be read in all the conclusions, and perhaps should have been put in.

I think what we will do -- let me suggest this -- I think what we will do is prepare a summary of the entire conference. Now at the conclusion of this session we will have a summary which will cover the first and second conferences which will be a cumulative summary. At that time we can make adjustments. But I don't know if that point will come up.

MR. ATKINS: My point is that at the first session, the Public Health Service, in Mr. Kittrell's report, clearly set forth that there was interstate pollution arising from Virginia and the District of Columbia, and I object to any such conclusion.

THE CHAIRMAN: As I said, Mr. Atkins, I don't think that has been proposed.

Now, with that, I think we can call upon the District of Columbia for their presentation. Mr. Cary.

we can't do as far as stream pollution and its activities in the District are concerned.

NOTE: Laws and Regulations of the District of Columbia Pertaining to the Control of Stream Pollution, marked Exhibit W. C. 1.

MR. CHAIRMAN: Mr. Cary, do you want Mr. Auld to continue at this time?

MR. CARY: I think at this point if we are going to cover the details as far as the District is concerned, that Mr. Auld should take up the discussion at this point.

MR. CHAIRMAN: Mr. Auld may have some charts and maps. Do you need any help with those, Mr. Auld?

MR. AULD, Director of Sanitary Engineering, D. C. Health Department:

Thank you, Mr. Stein, I think I can -- I do have for use later a map, but I believe we can pass that. I think we could conserve a great deal of time by agreeing that Mr. Kittrell's statement gives very full coverage to the problems of pollution. I think I would stand on his findings and concur with his conclusions.

In support of his findings, I have certain things which I might well put in the record. He, for example, has referred to overflows during rainstorms through combined sewers and also during dry weather. This deserves, I think, some attention, and I'd like to develop that just a little bit.

We have installed gauges at certain of the principal outlets, where discharges into Rock Creek, the Potomac, and the Anacostia occur. And the first year that those gauges were in service provided some interesting information.

Where our interceptors had passages in the order of one or two dilutions, that is, dry weather dilutions, we had for twelve months discharges for as much as three and four hundred hours per year. These were rain storms, the result of rain storms, and frequencies which went as high as sixty or more occurrences a year.

During dry weather certain of the sewers were also overloaded at certain periods. And in one instance, in the vicinity of the Water Gate, which Mr. Kittrell pointed out, we had discharges for 475 hours during the year during which no rain was falling, and this occurred on 65 different days.

I have here a plotting of these gauge readings which may be of value. I don't think you would choose to look at it now from a conference standpoint, but for the record --

Those lines -- each is based on a gauging point and the vertical plotting is the hours and given day when overflows to the river occurred. This is a mixture of both dry weather and wet weather overflows. I would urge that you disregard this line because it's not real -- it is just apparent. There is a tide gate at that point, and there is tide gate leakage which gives the effect on our gauge of overflows. I have the chart to support that statement.

There have actually been no dry weather overflows at all in spite of the appearance of continuous flow of that type.

Mr. Chairman, you might care to have that for the record.

MR. FISHER: What length of time does this cover?

MR. AULD: These are monthly, going back to 1955 through last week, August 12th.

NOTE: At this time the above mentioned chart is marked Exhibit W. C. 2.

MR. AULD: Reference has been made to overflows at Blaine Street, and here I have a separate charting of that one. The columns on the bottom represent the rainfall in inches. And these stalagmites are measures of the million gallon load to the river that day. This is raw sewage. This plotting, the lower line, is the gauge flow of total delivery of sewage from the Washington Suburban Sanitary Commission sewer in the Anacostia valley.

One thing I can point out -- In the month of July there was one discharge in thirty days, thirty-one days, and that delivered a total of 2,000,000 gallons. And in the month of June, 1957, I think you'll find the aggregate delivery was well under 10,000,000 gallons, to the river.

This in the Anacostia at Blaine Street. I'd like to place this in the record, Mr. Stein.

NOTE: Above mentioned chart is now marked Exhibit W. C. 3.

I think this deserves some amplification because prior to the construction of the sewer from the Sanitary Commission, most of the sewage generated in that water shed received partial primary treatment or none. The connection was made at the entire expense of the Sanitary Commission and the line was extended well into the District of Columbia for connection to our system. That point of connection is temporary and plans are now under way for the extension of the Maryland trunk to the District Poplar Point pumping station, after which there will be no occasion for such overflows as you see here recorded. That is sometimes not understood and I would like to emphasize it.

This is an interim condition and the final clean up in this type of discharge is under way. It is necessary in underground construction to coordinate with highways and other things. And the Anacostia Freeway is now being designed and will be placed under construction, and the Maryland sewer will be worked out in conjunction with that highway facility.

MR. STEIN: Mr. Auld, is any future authorization necessary for this work to get under way, or has that all been done and the money appropriated?

MR. AULD: I think Mr. Brown may have detailed information on that. My understanding is that it is all clear.

MR. STEIN: Thank you.

MR. AULD: We estimated that we might get as much as 3,000,000 gallons a day on the average, and thought that was still advance, because the flows we were thereby keeping about 25,000,000 gallons of substantially raw sewage from that waterway. But we have been very pleased that there has been so little to come out.

There has been discussion of the effect of the discharge from the Blue Plains Sewage Treatment Plant, and I would like to present for your record the most recent annual report for the fiscal year ending June 30, 1957.

In that you will find the BCD reductions in the past year were 25.9%.

NOTE: At this time Report of Operation of the District of Columbia Sewage Treatment Plant, Fiscal Year 1957, is marked Exhibit W. C. 4.

MR. AULD (Continued): In the matter of combined sewers, which overflow to either the Anacostia or the Potomac, or Rock Creek, we have records of seventy overflow points. I will deal in some more detail at a later time, Mr. Chairman, with some of the questions which that system poses; but what I am attempting to do here is give you something further as to the nature and source of pollution.

To carry the results of river sampling to the most current date, last week, I would like also now to present for your record our most recent sampling results.

NOTE: A package containing 36 sheets, showing results of river sampling, now marked Exhibit W. C. 5.

MR. AULD (Continued). And as a document bearing on the dissolved oxygen in the river, I would like to refer you to a paper by Thomas M. Niles, of September, 1956, entitled "Required Degree of Treatment - Pollution of the Potomac River". This is my sole copy. I should like to put it in Mr. Atkins' hands if he has any way of reproducing it.

THE CHAIRMAN: If you would put that in as an Exhibit, we can reproduce it and return this copy to you. Would that be agreeable?

MR. AULD: Yes, indeed.

NOTE: The paper referred to above, "Required Degree of Treatment" by Thomas M. Niles, is now marked Exhibit W. C. 6.

MR. AULD: I will use this later for reference, so I will put it in the record later.

I think, Mr. Chairman, that concludes all I can add as to the sources of pollution.

MR. CHAIRMAN: Thank you. Are there any questions or comments on Mr. Cary's or Mr. Auld's statement, from either The Commission of Maryland or the Public Health Service?

NOTE: The conferees indicated in the negative.

If there are none, we might have the statement from the Maryland representative. Now, you can talk about occurrence of pollution and make your complete statement, or if your statement is going to concentrate on effects, you may wish to wait until that point in the agenda. Mr. Brown, do you care to make a statement at the present time?

Mr. Tisdale, would you care to make a statement at the present time?

MR. TISDALE, Director, Interstate Commission on the Potomac River Basin:

I would like very much to, sir. I would like to make it, sir, sort of a combined statement of the nature and effects of pollution in the Washington Metropolitan area.

In as much as I have only been with the Potomac Commission as Director for approximately two years, and I have with me one of the Commissioners who has been for well over a decade, closely associated with the work of the Interstate Commission, I would like very much to have Mr. Fisher speak as to our place on the record on certain pertinent data which I think bears directly on the case.

According to the records of the Interstate Commission on the Potomac River Basin, the Chairman appointed in the summer of 1952, a Metropolitan area study committee as follows:

Chairman, Mark D. Hollis, of the United States Government; and two members, Hon. John A. K. Donovan of Virginia, Senator John R. Fletcher of Maryland, and Dr. Daniel L. Seckinger of the District of Columbia.

On September 19, 1952, this Committee called together representatives from all the Health and Sanitation Departments of the jurisdictions in Maryland, Virginia, and the District of Columbia, within the Metropolitan Area. This Committee was instructed to study the present condition of the Potomac in the Washington Metropolitan Area to determine the adequacy of existing and proposed waste treatment programs,to determine the present and the future water uses, and to prepare and recommend to the Commission a waste treatment program.

In order to expedite the work a technical sub-committee made up of representatives from the several jurisdictions was appointed and they worked together for the next several months, aided by a consultant, Mr. Charles Ryan of Johns Hopkins University, and by several representatives from the Public Health Service, during the remainder of 1952 and 1953.

In February of 1954 a three-volume report was issued by the Interstate Commission on the Potomic River Basin as a result of these very careful studies, studies which were entered into wholeheartedly and with a great degree of cooperation by all the representatives, the technical representatives from the several jurisdictions.

Now, this three-volume report that was issued by the Commission has three parts to it. The first was a lay interpretative report entitled, "A Clean River for the Nation's

Capital". The second section that was part of the report was entitled, "A Report on Water Pollution in the Washington Metropolitan Area". And the third section was known as an Appendix and contained the biological findings.

I should like to place in the record these reports, Mr. Chairman. I have two with me here and I can get the third one. I did not bring the third. It pertained to the biological findings. I think these are most pertinent.

> NOTE: The two volumes mentioned above are now marked Exhibit P. C. 1 and P. C. 2 and P. C. 3. (The third volume, P. C. 3, is to be furnished at a later date.)

MR. TISDALE (Continued): Now, in these two reports are the conclusions of the technical report -- I think I can briefly summarize I think -- and it bears out the evidence which has been very clearly presented here this morning.

The Potomac River in this region is grossly polluted. Rapid population growths and tidal effects have aggrevated a bad situation. Two, the Federal government, with a vast number of installations in the area, is tax exempt, has not assumed its rightful responsibility, and has placed undue financial burdens on the local governments.

Three, combined sewers in local areas create a specially difficult problem, both physically and financially, in dealing with the raw sewage reaching the Potomac in this area.

Four, a coordinated long range area plan for adequate collection and disposal of waste from the entire Metropolitan area is lacking.

Now, as to the effects of pollution on present and potential water uses, I would like to make a couple of remarks.

The pollution, serious in nature, disclosed by this study which was made by the Commission, together with subsequent observations, has a detrimental effect upon water uses.

One -- the comment on the public water supply. The public water supply may be affected detrimentally by the expanding real estate developments both in Virginia and Maryland above the water supply intake at Little Falls and Great Falls.

Two, recreational use of the water in the Potomac is harmed, and there is a public health hazard in fishing, canoeing, sailing, and motor boating.

Three, swimming is dangerous and is not advisable in the Washington Metropolitan Area.

Four, the waterfront development plan, which was proposed jointly by the National Capital Planning Commission and the Interstate Commission on the Potomac River Basin, and set forth in this report, would be greatly handicapped unless sewage pollution is controlled.

I believe that covers the statement I wish to make. It is only partial, of course, and I would like to have Mr. Fisher give a little more background as to the work of the Commission with respect to pollution.

MR. CHAIRMAN: Thank you. Mr. Fisher.

MR. FISHER, Commissioner on the Commission on the Potomac River Basin:

Mr. Chairman, I didn't have much notice about this meeting and I only have some penciled notes here from which I would like to develop my statement.

The Potomac River Commission from its beginning in 1941, has been deeply concerned about the pollution reaching the river. In 1945 it published a report which showed in detail the amount of pollution in population equivalents reaching the river and its tributaries.

It was intended that this report serve as a base line from which progress or lack of progress could be measured in the future.

The report shows, briefly, at that time that the District of Columbia contributed 45% of the total pollutional load of the entire river; Maryland, about 30%; Virginia, about 18%; West Virginia, 5%; Pennsylvania, 2%. Most of the pollution from Maryland and Virginia, and all of the pollution from the District of Columbia, originated in the Washington Metropolitan Area in 1946, as it does today. Pennsylvania and West Virginia contributed practically nothing to the pollution problem in the Metropolitan Area if we disregard the effect of acid mine waters upon the river water.

Practically all of the pollution was caused by domestic sewage. The total amount of industrial waste was estimated at that time as being approximately equivalent to the waste of 495,000 persons, after treatment and after discharge to the surface streams. Most of that industrial waste occurred above Washington.

The total sanitary sewage and industrial waste in population equivalents in the Metropolitan area was as follows, according to this report, which was intended to serve as a base line:

Fort Belvoir, 14,000 persons; Alexandria, 50,600 persons; Washington, D. C. 600,000; Arlington, Virginia, 63,600; the Washington Suburban Sanitary Commission untreated sewage, 12,000; Washington Sanitary Commission Anacostia plant, 54,000; which makes a total for the Metropolitan area of about 794,200 people.

This is a figure which you can compare with the figure in Mr. Kittrell's report, and represents the condition of the river largely as the Potomac River Commission found it.

Now, with respect to the Potomac River Commission's efforts to clean up the area, I would like to read the complete statement from page 16 of the fifth annual report of the Commission, which was published in 1946.

It is headed, Virginia Pollution Control Legislation. When the Commission was origanized, Virginia was the only state within the Potomac River Basin drainage area which did not have adequate pollution legislation. The Commission, therefore, through its Virginia Commissioners, held a number of meetings during the fall of 1943 and the early months of 1944, for the purpose of discussing in some detail the desirability and possibility of promoting pollution control legislation for the state. Interested persons throughout the area were invited to such meetings.

As a result of these conferences, a Bill was introduced in 1944 General Assembly, providing for the establishment of an agency having control of pollution. That Bill did not pass, but during the same session the advisory legislative council was directed to study the problem and prepare any such legislation deemed advisable.

After nearly two years of study by the sub-committee, the council reported and presented to the 1946 General Assembly a Bill providing for pollution control legislation for the State. After numerous amendments the bill was passed. It became law after being signed by the Governor on March 30, 1946.

The new law established a State Water Control Board of five members representing the principal parties interested in pollution abatement. It gives the Board sufficient powers and duties to carry forward an adequate program for the control and abatement of pollution in Virginia, particularly in so far as new industries are concerned.

For the convenience of the reader, on the opposite page is given a summary of the principal features of the law which became effective July 1, 1946.

On another brief paragraph here, which bears on the policy of the Commission: This is taken from a pamphlet called, "Potomac River Basin Commission, Its Policy and Program", and was also published in 1946.

On page 15 are two short paragraphs, under the heading, "Long Range Program for the Basin." The program presented herein meets only partially the immediate problems of the Basin. It is realized that it is preferable to plan more completely and upon a longer range basis for the continual abatement and control of pollution and the development and conservation of water resources throughout the Basin. It is the Commission's objective, working with existing Federal, State, and local agencies, to effect over a period of years a substantial and reasonable control of pollution within the Basin and to conserve and develop water resources of the Basin to benefit the inhabitants and industries without the use of superimposed authorities.

That last phrase without the use of superimposed authority has been the guiding policy of the Commission ever since its creation. It necessarily had to be from the nature of the Charter.

I would like to say at this point, also, that the Commissioners, I am sure will agree with me in this personal statement of mine, that great credit for the public interest now exists in the condition of the river, we feel must go to the press and radio and the television people who have so generously reported the condition in the river and have helped the Commission to get its message to the public. Thank you.

MR. CHAIRMAN: Thank you, Mr. Fisher. Are there any comments or questions on Mr. Tisdale's or Mr. Fisher's statement by the conferees? If none, perhaps we can go on to the next point, and that is II C, Effects of pollution on present and potential water uses.

Do the District of Columbia representatives want to say anything specifically on that?

MR. CARY: Mr. Auld will speak for us.

MR. AULD: I think, Mr. Chairman that again Mr. Kittrell's statement in that respect covers it so well that I would have nothing to add.

MR. CHAIRMAN: The Maryland representative, did you wish to address yourself to that phase of the problem?

MR. BROWN: We would certainly concur in the statements presented by Mr. Kittrell. We would concur also in the remarks just made by Mr. Tisdale.

The effects of the pollution on potential water uses in Maryland would be difficult to document. In our Department, however, we receive rather numerous inquiries concerning the suitability of the Potomac in the reaches under discussion, as areas for recreation, in the location of summer camps, and in the possibility of desirable residential development wherein use can be made of the river for recreational purposes.

In all instances it is necessary that we advise those inquiring that the river is completely unsuitable for those uses which contemplate contact with the water.

I am sorry that we are not able to state definitely the number of such inquiries that we receive, because they have not, unfortunately, been made a matter of record, but they are inquiries that come to us with, I would say, fair frequency during the spring and summer months of the year.

MR. CHAIRMAN: Thank you, Mr. Brown. Are there any questions or comments on Mr. Brown's remarks? Mr. Tisdale or Mr. Fisher, did you want to comment specifically on this portion or direct any remarks to this part of the agenda?

MR. TISDALE: Mr. Chairman, I have nothing further to add to the statement that I made, but Mr. Fisher has a statement he would like to bring in here relative to the effects of pollution on potential water uses.

MR. CHAIRMAN: Thank you. Mr. Fisher.

MR. FISHER: Mr. Kittrell, in presenting his report this morning stated that no study had been made of the condition of the river at Little Falls to determine its suitability as a source of water supply.

In view of the fact that there is much development of property along the river above Little Falls, and in view of the fact that it might in the future be seriously jeopardized as a source of water supply, and in view of the fact that the results of such a study may have definite value in connection with impounding the water on the river above Little Falls as a source of supply. Such an impoundment, as contemplated, would be a protection from a sanitary standpoint to a certain amount of pollution.

So, I would like to state that such a study would be valuable in indicating the future suitability of Little Falls as a source of water supply for the District of Columbia and adjacent territories, because the District is supplying both the suburban area of Maryland and Virginia from this same source.

MR. CHAIRMAN: Are there any comments on that? Mr. Brown.

MR. BROWN: Mr. Chairman, I have to apologize to one of my colleagues for failing to corroborate when our opportunity was given us to speak. May we make a comment now?

MR. CHAIRMAN: Certainly.

MR. McCOMAS: I'd like to comment on potential uses of water upstream from the area which we are studying. As I understand this report, water reaching the District at Three Sisters

Island is not in too bad shape at the present time, but we have the potential upstream that might change the picture in the future, a thing brought about primarily by decentralizing Federal agencies and moving them some distance outside of Washington. We already have one and are pretty certain of the second one in Montgomery County. And, in the same manner that flies follow honey, housing projects are going to follow those agencies into those towns and create a new sewage problem upstream from this immediate area.

Now, there are going to be Federal agencies, tax free land, and my personal feeling is their problem should be solved by Federal funds rather than local or county or state funds.

And we are going to be up against it in this sense. I don't think the projects will be small enough to entertain underground sewage disposal of private plants. They are going to go in a water carriage sewage, and the question is where to carry that sewage to and what to do with it, because all of it is going to be upstream from the new intake.

Our thought along those lines is that this group formulating its policy, could bring about some rigid control -- I don't know through what channels -- but say, some rigid controls through zoning to control where those projects go so that they will not be spread out all over the County, but have them locate in such locations as can be sewered reasonably and economically, and that sewage possibly conveyed on down through the District and not discharged into the river upstream from Little Falls.

The only alternative would be an excessivly costly sewage treatment plant, possibly to the extent of putting a water treatment plant in back of the sewage treatment plant, turning the sewage loose equivalent to the quality of stream water.

That problem is definitely coming up and we are going to have an acute problem in solving the housing project in the County or in the areas upstream. Now, if they happen to go downstream from this area, it isn't going to be too bad.

I don't know if there is a similar situation existing in Virginia where they are going on the Virginia side as well upstream from the intake.

But we are certainly going to have this problem -- and then re-establish it further upstream. So, I am hopeful that you folks can integrate some plan of taking care of the problem that is going to develop in Montgomery County. Thank you.

MR. CHAIRMAN: Thank you. Since you and Mr. Fisher have indicated a new element here that perhaps wasn't covered in Mr. Kittrell's report, and perhaps as interim summary, we might indicate what we think the statements are.

Generally, we think of an injury to a potential water supply we are generally speaking about pollution which exists or the use that doesn't exist, but which can't come in. Now, what you gentlemen are referring to is a potential interference with the water supply where the usage is, that is, the water intake is there, but the pollution source is not there yet. And as I understand it you are thinking in terms of some mechanism of future planning so that water use will not be interferred with when the development takes place.

Now, I think that is a very legitimate area of inquiry and if any of the other conferees or participants may have some comment on that, we will be happy to hear it.

MR. ATKINS: To supplement your statement I would say that, yes, a large number, as Mr. McComas has brought out, of potential situations exist, but there exist actual situations, too, that are of concern, I think. So, it is not entirely potential, as I see it, above the existing intake.

MR. AULD: Mr. Chairman, I would certainly like to voice my concern in the matters of water supply which have come up.

It has been my feeling before the discussion that that was not a pertinent part of this conference because I supposed you were concerned with existing pollution, not potential pollution.

MR. CHAIRMAN: That is correct, in what we are doing here, but if -- and I think this is a part of the question that we have, to abate existing pollution -- but if a planning recommendation should come up from the conferees, I don't think it would be beyond the scope of inquiry to direct something toward that nature as an advisory suggestion rather, and not necessarily be something within the jurisdiction of us to abate.

Now, we have always in this act, and may we go back to some philosophy on this -- We have the job, Federal job, and certainly the states do, of watching over pollution situations. While our immediate jurisdiction in the Federal area gives us certain responsibilities in abating interstate pollution problems. We regard our function as a preventive function, and try to use our techniques and our means of persuasion to anticipate possible pollution problems and try to stop them.

Now, I think we have a very difficult problem in the District as we have in many areas where we have a large metropolitan complex, where the problems have already started, and then we have to try to -- in a real groping way -- try to unravel them. And sometimes it might be best if we, certainly, would try to point to these areas, as these gentlemen have done, perhaps, and try to anticipate some of them.

Now, I don't think, and I agree with you and Slim that certainly our main area of interest should be toward the abatement of existing pollution problems.

If there are no further comments on that we might get on to the next main topic, and that is --

MR. CARY: Pardon, Mr. Chairman. We have a representative of the National Capital Parks who might like to make some statement concerning the effects of pollution on present and potential areas with respect to the parks.

I don't know whether Mr. Thomas wants to speak at this time or not. He is totally unprepared as far as my telling him I might ask him.

MR. THOMAS: I was invited to this conference to represent the National Capital Parks because of our direct concern of the pollution of the river, and as Mr. Cary has just stated, pollution hinders the National Capital Parks from carrying out a number of its programs and it is compelled to wait on pollution abatement and pollution improvement of the river to carry out some of the most needed recreational programs of the District of Columbia. It is continually besieged by water sports associations to make improvements on the river where the water sports activities can be carried on safely and in the interest of good public health, and any recreational development should be healthful recreational development.

We are faced at the present time, I may say with the building of a new water sports center in the vicinity of the area between Key Bridge and the Lincoln Memorial, a location where the water sports associations want the center built. It is one of the most grossly polluted areas of the river, due to the concentration there of the discharges of the combined sewers, and also Rock Creek. That area seems to be a location that we are forced to consider due to the outside pressures and yet we are hesitant to proceed knowing tne repercussions that may befall the National Capital Parks from paper publicity and otherwise.

We are anxious to know what the quality of the river along in that area should be for proper recreational development.

Now, we speak of boating, canoeing, and other water sports. Water skiing is really a swimming sport. Motor boat activities, the President's Cup Regatta, and others bring about body contact with the water, which is, in other words, a demand for swimming quality of water in the river.

We would like to know what the National Capital Parks should do in waiting until that river reaches that stage of improvement before we can carry on with the much needed improvements to the Nation's Capital.

MR. CHAIRMAN: Are there any comments on Mr. Thomas' statement, any questions? Does anyone else want to comment on the effects of pollution before we move on?

I think we might then take up the next major topic, Measures Taken Towards Abatement. And first, the action taken and nature of delays, if any. We will call on the District representatives first.

MR. CARY: I think Mr. Auld will speak for the District in that respect.

MR. AULD: Mr. Chairman, in the District of Columbia our steps toward the abatement of pollution in interstate waters really started many years ago; and those were first of all political efforts, because the District is surrounded by the State of Maryland on three sides. And in 1918 there was created by the State a Sanitary Commission to carry out water supply, sewage collection and disposal, refuse, and perhaps other services for the then suburban population.

The problem presented by that was immediately recognized and the United States Congress in 1916 authorized the connection of Maryland sewers to the sewage system of the District of Columbia. There was an agreement entered into between the two jurisdictions in 1924, which was amended in 1926, and thereafter in the Rock Creek Valley, the District constructed an interceptor which took a large quantity of sewage originating in Maryland; albeit at that time it simply took it to the Potomac and delivered it there raw. But later that led to the sewage treatment plant at Blue Plains when it was constructed.

In 1951 another major connection from the Maryland system was made in the upper Potomac area, and it would be my guess that it was that connection which resulted in the substantial improvement of the water in the Three Sisters area, or section, as shown by the samples.

If that plotting were not on a logrithmic scale, it would be much more dramatic, the reduction which occurred after that Maryland connection was made.

Following the '24 agreement, it was a long period where no further major connections were made with the surrounding territory, and it was soon apparent -- certainly by the middle '30s, that flows from the Maryland communities in the Anacostia valley would be a problem. That was met temporarily by a treatment plant which was constructed at Bladensburg.

But negotiations were started soon after that, looking toward an entirely new agreement between the two jurisdictions, under which we would in effect jointly attack the pollution problem with which we were both confronted. The culmination of that was an agreement entered into on the 12th day of August, 1954, between the Washington Suburban Sanitary Commission and the District of Columbia, which I would like to place in the record.

I think this document is unique in many respects in that it provides an equitable basis on which two major jurisdictions can together solve a common problem.

NOTE: At this time the document mentioned above is marked Exhibit W. C. 7.

MR. AULD (Continued): The gist of the arrangement between the two jurisdictions was this:

That Maryland sewage will pass through the sewage system of the District of Columbia, for that service certain rental payments are made based on the size of the flows, the relative flows from the two jurisdictions. That principle applies all the way through the sewage treatment plant and, in particular to any facility existing at the time that agreement was entered.

All construction undertaken by the District of Columbia subsequent to that, which would serve the two jurisdictions, was to be financed in part by the two in proportion, to their respective uses.

That made the first important contribution toward the expansion of the Blue Plains Sewage Treatment Plant. It also made possible the connection at Blaine Street and the Anacostia Valley, to which I referred a little while ago.

Maryland proceeded immediately, upon completion of that negotiation to extend the sewer, or to engage the engineering services and carried the work as far as it could at that time.

The next step was financial. You cannot abate pollution without money. And the sewer operation in the District of Columbia, as recently as five or six years ago, was substantially without funds; certainly without any other degree which was sufficient to meet the problem.

So, our next attack was to secure authority from the United States Congress, which is our legislative body, to create a sewage works fund, and to impose a sewer service charge for service in the District of Columbia. And that was instituted in August of 1954. I have here a statement of three years of that fund which you may find of interest, and I would like to put that in the record:

NOTE: At this time the statement mentioned above is marked Exhibit W. C. 8.

MR. AULD (Continued): It shows that we have modest revenues in the order of four to five million dollars a year, from which we must defray out operating costs which are just under three million dollars, leaving something less than two million dollars for capital construction.

A coincident move was the securing of borrowing authority from the United States with a ceiling of five million dollars, which is not very much, and its main purpose was to permit us to move into the additions at the sewage treatment plant. These funds would be borrowed from the United States Treasury with interest and are repayable, principal and interest, in thirty equal annual installments.

That got us in motion. We then realized that this was an old system whose backbone was designed in 1891 for an anticipated population of 500,000 people, had been in that form completed only in 1934, and then was perhaps already overloaded in many places.

We felt the first essential was facts as to the system and its behavior and we then undertook with the services of Metcalf and Eddy of Boston, to have an investigative survey and report, which treated all of the major sewers of the District of Columbia system; hydraulic profiles, capacities, existing loadings, anticipated loadings, with the resultant disclosure of their insufficiencies, or when they would become insufficient.

In addition to this volume, which I would like to place in the record, Mr. Chairman, we have many profile maps that give detailed capacities of all overflow regulators, pumps in the entire system.

NOTE: At this time the volume mentioned above is marked Exhibit W. C. 9.

MR. AULD (Continued): And it was with that we gained information which I have already put before you.

Using that information as a base, we then engaged three engineers, whom we constituted as a board. We called them that, they had no standing in any organizational set ups. And they were, Frank A. Marston, Samuel A. Greeley, and Gustav J. Requardt.

They have delivered to the District of Columbia two reports: One on the sewage treatment plant, outlining the program of improvements, and another on the sewage system, the sanitary and combined system, also recommending improvements.

NOTE: At this time two reports to the District of Columbia Department of Sanitary Engineering on Sewage Treatment Plant are now marked Exhibit W. C.10 and Exhibit W. C. 11.

MR. AULD (Continued): Now, as to what is being done at this time. At this time at the District Treatment Plant we have under construction work for the total cost of $7,443,000.00 including engineering services; and now starting other work of a value of about two and a half million dollars.

This is to provide secondary facilities, highrate activated sludge treatment, which will accomplish an 80% BOD removal of the connected population in Maryland. The present completion date of those facilities is calendar year 1958.

What is under contract is the blower, building, and equipment, aeration tanks, final sedimentation tanks, and conduits. We now have under design a complete replacement of the grit removal facilities of the plant; also, the installation of sludge heating and circulating facilities, and thickening tanks, which will be necessary in order to handle the sludge resulting from the secondary process.

I cannot give you a firm date for the completion of the sludge features of the plant.

The record might show that recently completed, that is, in 1954, were chlorination facilities, which when used, accomplish something better than a 90% kill on primary effluent. As pre and post chlorination it takes about seventeen parts.

We have also recently completed at a cost of $2,500,000 sludge drying and incineration facilities to assist us in the disposal of sludge in the quantities which we expect when our secondary plant is under way.

Now, Mr. Kittrell had a chart up here which I'd like to use if I may.

(Indicating on chart) This shaded area on completion of the Blue Plains Plant will extend to some point about here. This represents something in the order of 200,000 pounds of B.O.D. a day, right here. Am I about right on that, Mr. Kittrell?

MR. KITTRELL: I believe it would show a little more than that, about 220,000.

MR. AULD (Continued): And in 1958 I believe the total deliveries from the Metropolitan Area were brought down something in the order of 80,000 pounds.

You will find in the Niles report, to which I referred previously, an indication that the river has demonstrated an ability to assimulate something between 100,000 and 120,000 pounds B. O. D. on a population of some half million, and retained a minimum dissolved oxygen of 3 p.p.m. That may be disputed by some, but the records would seem to support his conclusions.

I emphasize that because I feel that the delivery of B. O. D. upon completion of Blue Plains will be substantially below even the level set by Mr. Niles, and that we should confidently look for dissolved oxygen in the range of 3 to 4 p.p.m. under ordinary conditions, and possibly 5. I think that the river will be materially better than any one of us now remembers it.

As to the plant we are building, it will have a capacity of 290,000,000 gallons daily for the maximum summer month of 1980; a hydraulic capacity of 400,000,000 gallons daily; and a nose count of 1,791,000 combined population, Maryland and the District of Columbia.

I would like at a later time to go into expansion of the plant beyond the present construction phase.

In anticipation of the Maryland connection to the District system in the Anacostia Valley, the District completely rebuilt the Poplar Point Pumping Station, giving it an installed capacity of 60,000,000 gallon daily. Maryland flows at this time are in the order of twenty-five to thirty million. District flows are nominal, something in the order of ten or less. This station, therefore, is in a comfortable position to handle the Maryland load.

We have likewise replaced all equipment in the Rock Creek Pumping Station which takes the upper Potomac flows, originating both in Maryland and the District of Columbia. Those are new units with a combined capacity of about 60 m.g.d.

Several matters relating to the sewer system itself I think I'd best defer until it is possible to describe our future program. They will fit I think more logically into that, although they are current efforts, and a map will perhaps understand them.

Last year we recognized that no matter how much we treated the sewage that it would be the things which people see, which will be cause for complaint. In conjunction with Mr. Cary, the D. C. Health Department, Mr. John Thomas of the Park Office, we undertook to clear the shore line, starting in the Anacostia. The river shore for the most part is under Federal jurisdiction. In the Anacostia, however, there are factories and private ownership.

Through application of Public Health regulations, Mr. Cary has been able to cause private owners to police the shore line. Mr. Thomas, through his efforts in the Park system has made material improvements in part of the shore line in the upper Potomac, possibly in the Anacostia. And since we don't have any shore line to point mentally -- except a little piece --

we have taken to the water and bought a boat, and have been skimming things we could find, floating objects, debris, tree limbs, tires, and everything else which were so photogenic.

And since May of 1956, we have removed 642,200 pounds of floating material, mostly from the Anacostia River. We have consigned those to oblivion, but they are quickly replaced by others coming down from other jurisdictions.

I think that is quite briefly, Mr. Chairman, an outline of our current program.

MR. CHAIRMAN: Thank you very much. That was very instructive.

Do any of the other folks have any comments or questions in that area?

MR. BROWN: I would just like to ask Mr. Auld a question.

Do you contemplate the description of estimated cost of these future projects?

MR. AULD: We will do that later.

MR. CHAIRMAN: Do you have any questions or comments from the Commission? From the Public Service?

MR. ATKINS: Yes. I recall, Mr. Auld, in your discussion of the treatment plant operation, you mentioned the pre- and post-chlorination and the good production that it got when it was operating. I was wondering if that was a temporary situation or what your future plans are in that connection.

MR. AULD: We have operated it for two summers and are not operating it this summer. I am trying to save enough money so I can really operate it when we have a secondary effluent to put out.

MR. CHAIRMAN: Do you have any more questions? Well, let me try a few for explanatory purposes.

As I understand it, you can charge a sewer service charge for your sewage works fund? Other than operating expenses you may have a take of $2,000,000 a year?

MR. AULD: Yes, or less.

MR. CHAIRMAN: What are those funds available for? Are they for planning and construction, or what can you use that two million for, other than operating expenses?

MR. AULD: Planning and construction.

MR. CHAIRMAN: Next. Have you borrowed, in fact, the five million you were authorized from the Treasury?

MR. AULD: We have authorizations to borrow, I think, three and a half million dollars. We have not taken the cash. Our liquidations have not required that the money be taken.

MR. CHAIRMAN: Do you think that the three million dollars can be used as other communities use their funds to borrow money from private sources, to pay for a bond issue?

MR. AULD: We have not explored that possibility.

MR. CHAIRMAN: Now, may I ask. At the Blue Plains Plant you have construction under way amounting to $7,443,000 and proposed construction for $2,500,000?

MR. AULD: That is actually under contract.

MR. CHAIRMAN: Under contract. Now, did that money come from this fund or did you get -- was that appropriated by the Congress? Was it borrowed?

MR. AULD: No, this was all our own departmental resources. It partly came from the Washington Suburban Sanitary Commission.

$3,490,000 of it was their share of the contract work which is current.

MR. CHAIRMAN: What I am getting at, was any of this $2,000,000 a year, or the money you borrowed, say one million five from the Treasury, was any of that used for construction in Blue Plains?

MR. AULD: Yes, it had to be. It was the only place we could get it.

MR. CHAIRMAN: I see, but generally speaking; if we were dealing with a private community, $2,000,000 revenue a year I guess would scarcely support a bond issue -- I'm being very optimistic -- between fifteen and twenty million dollars, tops, I think.

MR. AULD: The way we have to pay, that wouldn't touch it. It's costing us between fifty and sixty thousand dollars a year per million we owe.

MR. CHAIRMAN: I see. You have a higher -- That's right. So, the point that I think I was getting at is that certainly your sewer service charge and borrowing capacity will not give you sufficient funds to carry out all your future plans? I mean, you don't have that authority now?

MR. AULD: That I will establish

MR. CHAIRMAN: O. K. Now, let me say this, another few questions just to clarify this. When both of the improvements will go into effect, the 80% B. O. D. removal will take place?

MR. AULD: It will.

MR. CHAIRMAN: All right. Again, on the grit, would you say that the grit removal operations were under design -- Maybe you meant to say this, I don't know. This was a qualification. You said you couldn't give us any firm date on when the design necessarily would be completed on the sludge heating and circulation and the thickening tanks. Does that apply to the design of the grit removal, too?

MR. AULD: No. The grit removal -- the design on that will be finished in December of '57.

MR. CHAIRMAN: December '57?

MR. AULD: Yes.

MR. CHAIRMAN: Now, do you care to make any prediction as to when you think you might be able to come up with a firm date on when the design on the others would be completed? Not when they would be completed, but when perhaps we could have definite information?

MR. AULD: That will be four months from the day we return the preliminary design, whichwas due on June 18th, but was not received until now.

MR. CHAIRMAN: In other words, four months from now you may be able to have a more definitive answer?

MR. AULD: Yes.

MR. CHAIRMAN: O. K. Then to a layman like myself -- I know many other people in the room -- You've outlined whatyou think would be perhaps dissolved oxygen in the river after 1958 when this goes into effect. Now, would you care to perhaps translate what that improvement in dissolved oxygen, and I guess that concurrently we will also have the B. O. D. reduction, an 80% B. O. D. reduction and an increase in dissolved oxygen to 3 or 4 p.p.m., would you care to do this now or later on what that might do to water uses?

MR. AULD: I might do it now. I think we also get our counts way down. We certainly intend to try. And I confidently believe that we will keep the worst polluted stretch of that river in a condition approximating the objectives of the Interstate Commission.

MR. CHAIRMAN: From 1958 on?

MR. AULD: Yes.

MR. CHAIRMAN: Thank you.

MR. AULD: And those objectives were to permit the use of the river for boating, recreation, fishing and other things.

MR. ATKINS: That's after your secondary treatment plant has been completed and put in operation?

MR. AULD: Yes.

MR. CHAIRMAN: Probably the date more accurately -- We tend to say 1958. It really is the end of the calendar year '58. It is really 1959?

MR. AULD: Fiscal 1959.

MR. CHAIRMAN: Oh, fiscal 1959. Wonderful.

MR. AULD: I am still shooting for some operation in the calendar year '58.

MR. BROWN: Is this 80% B. O. D. reduction you contemplate, a 100% of the time?

MR. AULD: Yes. That will be with maximum monthly flows. And on averages we may go better. Of course, you realize that the high rate activated process has vague aspects, and its performance with any particular sewage is just what experience shows. It may be more, it may be slightly less. But we have reason to believe with competent design, and we have it, that we should operate within the range of 80% at these loadings.

MR. FISHER: For how long a period in the future is it contemplated that this plant will be adequate? All of the population estimates that I have seen in the past have fallen short of what actually occurred. Is that going to be the fate of this plant, too, or is there an ample margin of safety so that it will be producing this for a long period of time?

MR. AULD: The basis of design is the year 1980. And in further additions to the plant, I will describe when we get to the future program.

MR. FISHER: And what population is estimated in 1980?

MR. AULD: Combined in the two is 1,791,000, tributary to that plant. And I can provide for the record, if you like, a breakdown of that.

Mr. Chairman, I have here an assumed populations and flows to be delivered to that plant between 1956 and the year 2000, from the two jurisdictions which it will serve.

NOTE: The above mentioned paper writing is now marked Exhibit W. C. 12.

MR. CHAIRMAN: Are there any other further discussions now?

MR. BROWN: Is the 80% B. O. D. removal -- does that apply to all of the sewage originating in the Maryland-Washington area?

MR. AULD: All that is delivered to our system, yes. Now, they have water sheds which come below our plant, in the Broad Creek range area; and I don't think there is any sewage system down there today, but when the population comes unless it is pumping over into this plant it won't take care of it.

MR. BROWN: What I am really interested in is the fraction of the B. O. D. loading that is not getting to the plant through the combined sewers and so forth.

MR. AULD: That fraction on year round basis, is around 2% of the sewage generated in the District of Columbia, as near as I can estimate it. I think all of your Maryland sewage gets there, gets into the plant.

MR. CHAIRMAN: Are there any further questions? May I direct this perhaps to both conferees. You have put the agreement between the District and the Washington Suburban Sanitary District in the record. Now, in broad terms I think we understand that agreement, that the Washington Suburban Sanitary District will bring their sewage down to a point connected with a District line and that sewage will be treated at Blue Plains.

Now. One, we also understand, I think, that the Washington Suburban Sanitary District will pay a portion of the amount of the cost of the total operation.

Now, the next point is: What is the situation as to the jurisdiction of that once it gets over the District line? Does the District of Columbia have exclusive jurisdiction over its treatment and disposal, or does the Washington Suburban Sanitary District have any responsibility in that line?

MR. AULD: Our jurisdiction is exclusive. Although, I feel that when the Sanitary Commission makes a contribution toward construction I consider it as something of a joint venture, although that is not the sense of the agreement. That's what is worrying you, I guess.

MR. CHAIRMAN. Yes. Well, generally speaking, when an industry for example, or a large industry, discharges into a municipal plant, even though that industry may pay a relatively -- speaking in terms of an ordinary small business man or a householder -- a relatively large portion of the cost of operating the plant the responsibility for treatment and disposal rests with the municipality and not with the industry. And I guess, with your relationship with the Washington Suburban Sanitary District perhaps from the point of view of assessing jurisdiction responsibilities are roughly parallel?

MR. AULD: Once we receive it it is our problem.

MR. THOMAS: Mr. Chairman, I'd like to ask Mr. Auld one question for the purpose of the record.

MR. CHAIRMAN: Yes, sir.

MR. THOMAS: What improvement will be realized in the river above Hains Point after '58, recognizing the fact that you will still have discharge of the combined sewers and the tidal action in the river in the vicinity of Rock Creek, what improvement in the river flow quality -- in the quality of the river water, rather -- at that point can we expect after '58?

MR. AULD: From the plant construction I doubt if you will see any. You may for other reasons see some. It was curiosity on that point which prompted us to have new sampling points, starting at Fletcher's Boat House, which is just below Chain Bridge, and extending on down to Hains Point. And we have been a little bit surprised to find that the down river effects are not as pronounced in the Hains Point area as we had expected. We can get all the way down at times, halfway down to Potomac Park, and on August 7, 1957 our coliform counts were uniform at Fletcher's, Three Sisters, Roosevelt Island, Memorial Bridge, Highway Bridge, mid Potomac Park at 2400 per 100 ml. But with these -- even these low flows the tidal action is not bringing too much up in that Hains Point area.

MR. CHAIRMAN: Are there any further questions in this area? If not, I guess we should move on.

Shall we adjourn for lunch at this time?

Gentlemen, when we reconvene -- I think we are moving along rather well, but in any event should any eventualities happen that we go longer than expected, I think we should plan to adjourn promptly at 4:30. The check out time at the hotel is 5:00 o'clock. If it is necessary we will reconvene and start then. But the way it looks we may be able to line this up by that time.

NOTE. At this time, 12:40 o'clock, a lunch recess is taken, the conference to reconvene at 1:45 o'clock.

MR. CHAIRMAN: I think we are down to III D, Effectiveness of Measures to Date, and I think we might start by calling on the District of Columbia representatives to present any statement they may have on this phase of the problem.

MR. CARY: Before we enter into that phase of the problem, Mr. Chairman, I would like to ask the representatives of the National Capital Planning Commission and the representative of the Corps of Engineers who are here with us, who I believe might like to make a brief statement at this point in the proceedings. I think this is probably the most effective time for them to have their opportunity to speak. They were asked to come here. I would like to call on Mr. Kraft who is representing the National Capital Planning Commission. Thank you.

MR. KRAFT, National Capital Planning Commission:

Mr. Chairman and members of the conference, we have not prepared a formal statement. We are guests of the District Health people and I am here sitting for my Director, John Knowland, and my immediate boss, Mr. Paul Wyatt of the National Capital Regional Planning Council, both of whom are on annual leave.

The National Capital Planning Commission wants to give aid and comfort, of course, in this situation and has for a long time been interested in a clean Potomac, not merely the Potomac in the urban area, but close by the urban area up in to Loudoun County. And that comes about from a 1952 change in the status of the National Capital Planning Commission, or rather in its relationship to the surrounding localities. In 1952 a new Bill created a revised National Capital Planning Commission and a sister agency Regional Planning Council, bringing together the planning agencies in Montogomery County, Prince Georges, Loudoun, Fairfax, Prince William, the City of Alexandria, and Arlington, with the endeavor that plans affecting all the jurisdictions with D. C. should be coordinated.

Up to 1955 the Planning Commission could only make general statements about its interest in a clean Potomac and in their 1950 comprehensive plan for the Nation's Capital there are general statemencs about the desirability and necessity for a clean Potomac.

But conditions steadily worsening since 1950 took a little bit different tack when the Federal agencies, one or two key Federal agencies, began to look at locations in the environs and the Commission and the Regional Planning Council turned to some outside help to endeavor to give them what they should know about the pollution problems or potential pollution problems growing out of these movements in the environs.

And I have here a letter to the Chairman of the Planning Commission dated August 11, 1955, from General Sturgis, the Chief of Engineers, U. S. Army, and it says in effect to our Commission, don't permit any developments in the water sheds emptying into the Potomac above the water intakes for the District's water supply. Don't commit any developments that would result in treated effluent flowing into the river.

We adopted that statement almost wholesale in a policy for a Regional land use plan. We are in the midst of developing a land use plan for the entire region, the region as I said before includes the river up as far as Loudoun County. And as a guide to the planning staff the Commission and the Council agreed to certain policy statements, one concerning the water supply and sewage disposal.

Reading from it, "The Potomac River is the principal source of the region's water supply. Engineering studies have been made for further exploiting this source to meet future expanding needs. One of the possibilities is the need to build a major dam above Great Falls which would flood a substantial area upstream."

At the time we said we don't know enough about the engineering facts behind this thing to tell whether we as the Planning Commission know the dam is necessary, but we would certainly as a policy guide hold out of development any of the lands that might be affected by an impoundment above Great Falls.

Then as a second corollary policy to protect the purity of the Potomac supply, development should be so designed as to prevent discharges effluent from sewage treatment plants, either into the river or into tributaries which flow into it between Little Falls and several miles upstream of Great Falls.

So, it's a definite policy on our part to do whatever we can as a purely advisory agency, working with local advisory agencies, to improve the situation on the Potomac River.

The latest step that we took was taken on December 13, 1956 when both the Planning Commission and the Regional Planning Council resolved that a potential development, industrial development, in Loudoun County on the river was inimical to the best interests of the people living downstream and I'd like to submit that resolution, also, to the record.

NOTE: At this time the above mentioned papers were inserted into the record. A statement of policy affecting the water supply and sewage disposal was marked Exhibit W. C. 13. The resolution was marked Exhibit W. C. 14.

MR. KRAFT (Continuing) That would conclude our statement other than to say that we are in sympathy with every effort that can be made toward making a clean Potomac.

MR. CHAIRMAN: Thank you, Mr. Kraft. Are there any questions or comments on Mr. Kraft's message?

MR. CARY: I'd like to ask Mr. Schwarz who represents the Corps of Engineers to make his statement.

MR. SCHWARZ: Mr. Chairman, I would first like to introduce into the record one thing of interest in this matter. We have two distinct different interests. One, the water supply for the City of Washington, the collection and filtration of, the Corps of Engineers responsibility, but it has been carefully discussed already several times this morning so I will not further get into it.

But, on the other hand we are now engaged in an overall Potomac study based on a resolution for the U. S. Senate Committee on Public Works, January 26, 1956, which I would like to read in part:

"Resolved by the Committee on Public Works of the U. S. Senate that the Board of Engineers for rivers and harbors created under Section III of River and Harbor Act approved June 13, 1902, be and is hereby requested to review the report on the Potomac River and tributary of Maryland, Virginia, West Virginia, and Pennsylvania, published as House Document number 622, 79th Congress, and other pertinent references in order to determine whether any modification the recommendation contained therein advisable at this time.

"With the view to preparation of a comprehensive plan for the control of floods, the development and conservation of the water and related resources of the Basin with emphasis on present and future needs for water supply and pollution abatement."

In connection with this study, the Corps of Engineers should coordinate fully with the Interstate Commission of the Potomac River Basin, the states of Maryland, Virginia, West Virginia, Pennsylvania, and the District of Columbia, with the National Capital Regional Planning Councils and other state agencies concerned to insure full consideration of all views and requirements.

On the basis of this, we have now begun a study which is just now starting to study the area -- to work on the area which we are discussing here today. So I cannot say very much yet of what our plan will -- except, that we are, in this study, attempting to intergrate pollution abatement as a part of any river development plan for whatever purpose it may come in some part.

We are doing this study in cooperation and through the Public Health Service which already has initiated some studies on the Potomac Basin, and continues the cooperation of Mr. Tisdale and the states of Maryland, Virginia, West Virginia and Pennsylvania.

So at this time while we cannot tell you what we have done, we can only say that we are trying to fit any development plan of the Potomac River with the plans of this group and make a clean and useful Potomac to whatever use is found desired as part of all our planning.

That is all I have at this time.

MR. CHAIRMAN: Thank you, Mr. Schwarz. Are there any questions of Mr. Schwarz? If there aren't any, I would like to ask one, just to stay at the table, of the General District representative.

MR. CHAIRMAN: (continuing) Are your plans predicated on any assumptions of a minimum low flow?

MR. CARY: Yes, they are.

MR. CHAIRMAN: May I ask how you expect to have that guarantee or expect to get the minimum low flow?

MR. CARY: We're looking to Mr. Schwarz to come up with the answer.

MR. CHAIRMAN: Do you have or would you care to put in the record -- this, of course, may be premature but if we can, I think it will be a great deal of development.

Would you care to indicate the kind of minimum low flow, rock bottom minimum low flow, that you expect to come by the District for both water supply and water pollution control needs?

MR. AULD: I can answer the first half -- I mean the second half.

I think most of the people in the area are assuming a minimum flow of a 1000 second feet past the city for the reception of plant effluents. That's the basis of design in the Alexandria plant -- I think Arlington has been following that, and we have had that in mind with the Blue Plains figures

MR. CHAIRMAN: Is there any comment on that figure? Because I think if we can establish that as a basis of assumption we have gone possibly pretty far.

MR. SCHWARZ: May I ask a question?

MR. CHAIRMAN: Yes, go ahead.

MR. SCHWARZ: You said, I believe, that 1000 cfs, that is approximately what we had a few days ago -- that is the figure you would want to shoot for. We are now somewhat below that figure, but from last week we just about bit that figure.

MR. ATKINS: What is the frequency of falling below that figure through the years?

MR. CARY: Six percent. Three percent of the time, I think. Wouldn't that sound about right?

MR. SCHWARZ: I would like to answer that having not worked a frequency curve but just thinking back, we have this year -- we had it in 1954, we had it in 1944, we had it in 1930.

MR. CHAIRMAN: Well, let me ask you this question, Mr. Schwarz.

Without any structures on the Potomac can the Corps of Engineers, at the present time, guarantee a minimum low flow past the District of 1000 cfs?

MR. SCHWARZ: No.

MR. CHAIRMAN: They cannot?

MR. SCHWARZ: They cannot.

MR. CHAIRMAN: Thank you.

MR. SCHWARZ: Nobody can, not even the Corps of Engineers.

MR. CHAIRMAN: Now have you taken into account the possibilities of diversion from the Potomac River upstream and how they would affect any minimum guarantee?

MR. SCHWARZ: Yes, we are at present studying diversion upstream, particularly irrigation diversion which appears to be considerably serious, and if strong today the depletion rate in the last two weeks is much sharper, the depletion rate for the equilivant time in 1930.

While it is probably too early to put it all to irrigation and I wouldn't like to do that, we must, however, think that there has been some change between 1930 and 1957 which cause more rapid depletion.

We have had more rainfall this year, more than in 1930. Therefore, increased use appeared to be throughout the Basin.

MR. CHAIRMAN: Let me ask this question. Mr. Auld mentioned that minimum, perhaps you did, that minimum low flows in the past perhaps have fallen below a 1000 cfs three percent of the time.

Now, would you say that if there were increased diversion and there were no remedial measures taken such as impoundment that that percentage figure could be expected to increase to a greater percentage at the time?

MR. SCHWARZ: Yes.

MR. CHAIRMAN: Are there any further questions?

MR. WIETERS: I'd like to get one point straight. You speak of three percent of the time -- three percent of the days, three percent of the months, three percent of the years?

MR. AULD: Three percent of the - - I would refer you to this Niles study of September of 1956 and his plotting which is more clear on that point, but I think that it is years.

MR. WIETERS: Years?

MR. AULD: Yes.

MR. WIETERS: Once every thirty years, approximately?

MR. AULD: I would say so. Yes. And three percent is correct.

MR. SCHWARZ: I am not inclined to agree with that, Mr. Auld.

MR. AULD: Maybe you can check that.

MR. SCHWARZ: We are just beginning in the study and - -

MR. AULD: Once every thirty years

MR. SCHWARZ: It shouldn't have happened four times in the last fifteen.

MR. AULD: I don't think I answered you properly. I was thinking of annual average water consumption. Three percent of all the time.

MR. SCHWARZ: Oh, three percent of all the time. That is much better.

MR. AULD: Three days out of every hundred. In other words, it is on the average of nine or ten days or more a year.

MR. WIETERS: That sounds much too frequent to me, but thirty can't be right.

MR. SCHWARZ: I think that an answer to that or an attempted answer should be deferred for a couple of months. I think by then we will have some more definite data on frequency of low flows.

MR. CHAIRMAN: Aside from the frequency, let's see if we can agree on this -- that without some remedial measures there will be times when no one can guarantee a minimum low flow of 1000 cfs past Washington at all times. Is that correct, gentlemen?

MR. SCHWARZ: That is after Washington has taken out its water supply?

MR. AULD: That is correct. Past the Blue Plains Plant.

MR. CHAIRMAN: Now, the next point is and I think that perhaps we would agree, that as increased water uses continue and [illegible] diversions for irrigation increase that the tendency would be for this period to go up rather than to recede unless certain [illegible] measures are taken.

Are there any further questions?

MR. GEBHARD: We have in this report of the Commission's statement that minimum monthly mean flows that may be expected to occur once during each period are as follows:

Every two years, 2010 second feet; every three years, 1700 second feet; every five years, 1400 second feet; and every ten years 985 second feet. That is monthly [illegible] once every two years.

MR. GEBHARD: From the last question I took from it that you meant that the percentage increase in the course of [illegible] that the frequency was —

MR. AULD: Frequency, considering increased water uses and possibly [illegible] irrigated agriculture.

MR. [illegible]: [illegible] along these lines. I have been watching irrigation for a long time and have played with stream flows for a long while and I think if you compare irrigation today with 1930 it would be in a ratio of one hundred to [illegible] because in 1930 irrigation was something known in the West and was foreign to the East and it is something that more or less in the last ten years has taken over here, and actually at the moment is sort of in the stage of hysteria, as it is going very strong now. But I think

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from what I know of the stream flows of 1930 and all the streams in Maryland, our influence from irrigation was about zero.

MR. SCHWARZ: Our studies seem to indicate that between 1949 and 1954 almost 1700 percent increase in the irrigated area in the Potomac, a very sharp increase and I believe that this year with some crop failures all over the Maryland, Virginia area was another impetus to buy more irrigation equipment.

MR. CHAIRMAN: Are there any further comments on Mr. Schwarz's statement or on these aspects of the problem?

Thank you very much, Mr. Schwarz.

MR. McCOMAS: There is, Mr. Chairman, because in the Board Report on the Sewage Treatment Plant giving the percent of days when discharge into the Potomac is below the point shown in the above which is close to that three percent at 1000 second feet per day.

MR. CHAIRMAN: Would you say, just to pursue this to get the record straight on this, that generally the three percent is concentrated in the summer months when the recreational use of the river is at its greatest, or could be at its greatest? Or wouldn't you say that?

MR. SCHWARZ: No, not completely.

MR. CHAIRMAN: Not completely?

MR. SCHWARZ: No, I think the critical months are August through October.

MR. CHAIRMAN: August through October.

MR. SCHWARZ: The later half of the recreation season and the fall.

MR. CHAIRMAN: How well. Now, I am looking to the District and maybe the National Parks representatives for this.

I am a long time resident of the area and I consider August through October to be the recreational season for the use of the Potomac River, we consider that it is used for fishing, boating, picnicing, etc. As a matter of fact I consider that, and I am just speaking personally, as the peak period other than the Spring because in the Summer it is too darn hot for me to just stay home.

MR. THOMAS: April through September would be it.

MR. CHAIRMAN: Yes.

MR. THOMAS: It drops off considerably the latter part of September.

MR. CHAIRMAN: It does?

MR. THOMAS: The return to school.

MR. CHAIRMAN: Yes. Thank you.

Now I think we might move on to the next point which is under III:

"Effectivness of Measures to Date", that is measures taken toward abatement. I would like to again call upon the District of Columbia representative.

MR. CARY: I think Mr. Auld can probably again carry on most effectively for the District.

MR. AULD: Realizing that most of the measures are still uncompleted there is not much accomplishment that can be pointed to.

The Maryland connection, however, in the Anacostia valley was completed in the latter part of October, 1956.

And taken from our routine sampling at the District

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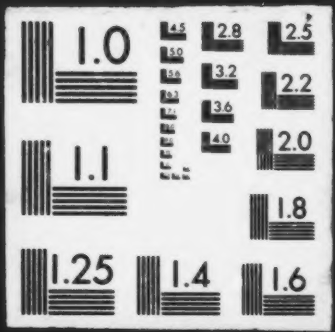
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line and Anacostia river we found in September before the connection was made an mpn of 24,000,000 per hundred milliliter. In October, we found that had dropped to 7,000,000. In November, to 620,000. In December there were two samplings -- one of 62,000. In the middle of the month it was down to 13,000.

Now, if our sample since that time would continue that trend I would have been very happy, but it didn't. And they have gone up again.

MR. CHAIRMAN: May I interrupt you for just a moment, Mr. Auld? I think for the benefit of some of the folks on the side if you could just take a moment and indicate what you mean by MPN.

MR. AULD: A most probable number of coliform organisms.

MR. CHAIRMAN: Right.

MR. AULD: (continuing) We might then sight Mr. Kittrell's Three Sisters chart, which you may recall showed a decided downward trend again in count upstream from the Key Bridge and the counts which he had there in 1956 were at about the same level as those in 1913 and 1932, I believe, or slightly below.

I think it is interesting that this point, as far into the city as it is, should have managed for forty years or more to have gotten no worse in that respect, if I have interpreted your data correctly.

MR. CHAIRMAN: I would like to point out, Mr. Auld, that these are based on a relative number of samples -- I realize that, -- therefore, they may not be fully representative of average. And on your scale for that plotting the July average at that station in 1957 was eight per hundred millilitter.

MR. CHAIRMAN: I believe that shows quite a different unit. You are using per hundred millilitter?

MR. AULD: Yes. I think, Mr. Chairman, that's the only thing I can show at this time.

MR. CHAIRMAN: Well, I think, and I'll just throw this out as a general point of view, that we would like some statements if we can from the conferees on what is the situation today in relation to water uses.

Now, Mr. Kittrell has outlined various water uses which are interfered with by the pollution of the Potomac.

To date, have these measures so improved the condition of the Potomac so that the game fish have returned, so that the nutrient condition caused by the flood banks have been abated, or that the coliform count has been reduced so that the coliform and other organisms associated with human diseases constituting a health hazard have been abated. Have the measures taken to date resulted in any of those improved conditions?

MR. AULD: In the two areas I spoke of, they have.

MR. CHAIRMAN: They have?

MR. AULD: Yes. And, not only have fish returned to the Anacostia -- I am told ducks are up there now. Or were and probably still are.

MR. CHAIRMAN: That's up in the Anacostia, but not up in the Potomac.

MR. AULD: The fish population around Chain Bridge is very good. Although, I think the Interstate Commission shows twenty species caught in the District of Columbia.

And from the Director of the National Capital Parks, I learned that one man who has had a fishing tackle business and been on the river all his life, stated that the Rock fish were better and more plentiful -- bigger at Chain Bridge than within his seventy year recollection. I give you that for what it is worth -- pure hearsay. But, there are fish up there.

MR. CHAIRMAN: Do we have any evidence from the Fish and Wildlife people on that point rather than just somebody's curbstone guess?

MR. FISHER: (Lawrence M. Fisher, Commissioner on Interstate Commission on the Potomac River Basin)

Well, Fish and Wildlife Service made an extended study of the spawning area above the Little Falls water intake and pointed to valuable commercial catches. The fish, presumably spawned from that section of the river. They had to, of course, pass through intense pollution downstream.

MR. CARY: Those studies were made recently, I suppose.

MR. FISHER: Within the last two years.

MR. CARY: Do we have any similar studies, say thirty or forty years ago?

MR. FISHER: I think not.

MR. CARY: Something that we could compare those conditions with present day conditions.

MR. FISHER: They went back on commercial catches in their dollar value over a number of years and tried to corollate that with the number of times when the canal feeder dam had been washed out by floods, to establish the value of the spawning area above, and there appeared to be some relationship.

MR. CARY: I was inquiring as to whether or not we have any technical information such as might arise from the Fish and Wildlife Service, and whether they are studies including period beginning about 1913 as compared with the period today so we have a more or less reliable measure.

MR. CHAIRMAN: Let me try to pinpoint this point in relation to the point on the agenda we now have of effective measures to date, and maybe we can ask this question of Mr. Cary.

In the report that Mr. Kittrell prepared he said that bacterial contamination from sewage presents a health hazard to anyone swimming in the river throughout the entire twenty-three mile section from Three Sisters Island to Hallowing Point. Would you say that the measures taken to date have been sufficient to remove that restriction and that the District of Columbia Health Department would recommend swimming in that stretch of the river?

MR. AULD: We certainly wouldn't say that they have been satisfactory. Swimming is not indicated.

MR. CHAIRMAN: Mr. Kittrell has also said there is a health hazard even in the casual contact with water such as that incurred in wading, fishing, and boating from Roosevelt Island to Marshall Hall.

Would you recommend that anyone wade in the river, or say that there is no hazard in the spray because of the present remedial measures?

MR. AULD: Not at the present time.

MR. CHAIRMAN: Now, Mr. Kittrell has also indicated that, and I think we have some indication that there are some fish coming up there, and I don't know if the District is the one to be called on, but -- and I call on all the conferees.

Do you think that the effectivness of the measures taken to date have resulted in the return of game fish to the stretch of the Potomac, say from Hains Point down to Hallowing Point, and what we might expect after the program as outlined by Mr. Auld goes into effect, presumably in the future? Do you think the game fish will come back?

MR. AULD: I don't think the area, and this is purely based on conjecture on my part. I don't think the area which you mentioned has many game fish in it. I think that the area that has been made possible in certain stretches of the river for the game fish to get through during the spawning season, for instance, are going to fish runs when the river was at a higher stage where we were probably getting more dilution of the pollution that was getting into the river in this area, and we haven't had reported this year any serious fish kills, to my knowledge -- let me check that with Mr. Brink -- in the Anacostia, Mr. Brink, have we had any serious reports?

MR. KITTRELL: John Stepp, have you been aware of any serious kills?

MR. CARY: Now, there is something that normally every year we have had in the Anacostia River -- is a reported serious fish kill.

MR. CHAIRMAN: That's correct.

MR. CARY: (continuing) And, I've seen literally just wagon loads of them belly up in that stretch of the river. But that hasn't been recorded this year.

MR. CHAIRMAN: This is the year -- Pardon me. Yes, Mr. Kittrell.

MR. KITTRELL: May I make one clarifying statement regarding the basis for the statement regarding game fish. That this is based on the generally accepted water quality for propagation, development and growth of fish in that particular area -- not the passage of fish through that area.

MR. AULD: Well, that is why I made the statement because I didn't think that they would be found in that area, but they have been able to go through it.

MR. CHAIRMAN: Now, we also have one other point mentioned in the report and that is that we have severe sight and odor nuisances due to floating solids and sludge deposits. I know that from personal experience that certainly the floating solids have been, at least the gross ones, have been removed because of the program which you have outlined.

But, how about the odor nuisances and some of the sight nuisances -- can you say that the effective measures to date have removed those?

MR. CARY: Well, I might mention something here that Mr. Auld hasn't pointed out. But there has been a tremendous improvement in the control works, the weirs, and the controlling mechanisms that have had to do with the spillage of sewage from our combined sewers into the river. And that program in itself has resulted in a lot less raw sewage going out from ineffectively operating mechanical devices, overflow weirs that became obstructed, and things like that where the sight nuisances and the odor nuisances have been greatly reduced just by maintenance work. I think Mr. Auld can give you more information on what that program has been and I don't think it is a matter that he has mentioned even because we have been talking about treatment works and not improvements in the system which have actually resulted in quite a lot of changes in the area you're talking about now.

MR. AULD: I think that is self evident to the people who have to live there but I think . . .

MR. CHAIRMAN: Let's try to get this for the record. Would you say that the sight and odor nuisances, while they may have been reduced, still persist in the area?

MR. GEBHARD: We do have problems with those. Yes, we do.

MR. CHAIRMAN: Thank you. Are there any other further comments on this portion of the agenda?

I think, if not, we will go on to the next one, and this is always a good one. "Is the proposed remedial action including a time schedule?"

MR. BROWN: Mr. Chairman

MR. CHAIRMAN: Yes.

MR. BROWN: If I may do so, I thought an opportunity was going to be given under "measures taken toward abatement" to discuss what the Interstate Commission has done in that field.

MR. CHAIRMAN: Well, we would be very happy to hear from you on that.

MR. TISDALE: That was questioned in Mr. Aulds' statement.

And the Commission would like to have in the record the program which they have undertaken because its a consistant and a steady program aimed at a specific goal. And, therefore, I would like to outline briefly the remedial measures on the way by the Commission to control pollution, at least, to assist in controlling pollution, and file certain data in that respect. And, also, speak upon pollution control programs in the Washington Metropolitan Area as outlined by five Sanitary Engineers attending our last Winter meeting.

Briefly, at first, may I say that the Interstate Commission which undertook to study and did study in 1952 carefully through an able technical staff the water pollution condition in 1952. That report, I mentioned here this morning, consists of three documents.

That report was made available to interested persons and it became, after a special effort in 1954 through the press, assistance of radio and television to acquaint the public with the facts about this serious pollution which was primarly what the Interstate Commission was to investigate and then try to interpet the results of the investigation to the people affected.

This educational program has been continued 1955, '56, '57 -- which is becoming more effective each year. The resulting public interest, we think, has speeded up the remedial programs in the Metropolitan Area.

In September of 1955, the Interstate Commission on the Potomac River Basin created a special committee under the chairmanship of David Auld, one of the Commissioners from the

District of Columbia. He and his committee developed an administrative and legislative plan for the abatement and control of Potomac River pollution in the Washington Metropolitan Area which I should like to make a part of this record.

MR. CHAIRMAN: Do you want to submit that to me? May we go off the record for just a second.

We will label this EXHIBIT P. C. 4.

MR. TISDALE: Page five of the appendix to this report, where we find a table, sets forth the cost of the remedial programs in the decade 1950 to 1960 anticipated expenditures. This totals $58,223,000 for collecting sewers and treatment works.

Apparently, as a result of this report and the educational program, which was quite intensive, Bills were proposed in the Congress during 1955 and early 1956, with a development of an overall plan for dealing with pollution control. No hearings were held. No legislation was enacted.

For our own report which was adepted unanimously by this Interstate Commission on November 7, 1955, the executive session recommended three specific things which I shall briefly mention.

First. A comprehensive area wide pollution control plan was needed looking to the year 2000 and Congress should provide the funds to make the plan designating the Interstate Commission on the Potomac River Basin as the coordinating agency.

Two. That Federal financial grants would be necessary to assist the local committees in building the necessary sewers and treatment works.

Third. The report recommended that the Public

Health Service should continue its cooperative support of the Potomac River Commission and state and local programs, and should be prepared to take enforcement action in the event such a step became necessary and was requested by the states.

So much then for the paving of the way through this report to try to get funds to prepare the necessary Metropolitan plan.

I'd like to say one more thing with respect to pollution control programs in the Washington Metropolitan Area, because in the Winter meetings of the Interstate Commission in January of 1956 and January of 1957, the feelings were water pollution control and water conservation in the Washington Metropolitan area.

Not only were National authorities in this field invited to appear on the program, but specifically to the point of issue here, the five Sanitary Engineers in charge of the work in the five jurisdictions, were asked to tell of the remedial programs underway. And, briefly, I just want to mention those, and file in the record a detail of what they had to say at the meeting in January of 1957.

First. David Auld, Director of the Department of Sanitary Engineering of the District of Columbia explained the used $12,000,000 secondary treatment plant expenditures from the years 1954, including 1958, which would be placed in operation in 1959. He stated, in his report, that "the combined effect of the efforts of all of the Metropolitan communities would be to reduce organic loading in the Potomac

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to the level prevailing prior to 1920".

Harry Shaw, Chief Engineer for the Washington Suburban Sanitary District set forth the striking progress made in the financial and physical integration of the Washington Suburban Sanitary District and the District of Columbia systems for collection and treatment of sewage.

Mr. Shaw urged that a study of the uses and needs of the Potomac River for the future be promptly developed either by a Federal Agency or by the Potomac Commission.

The third engineer appearing on that program to tell of remedial works was Mr. James J. Corbalis, the Engineer Director for Alexandria Sanitation Authority.

He explained the financing and the operation of that Authority which had just completed a program of expenditure of $8,350,000 for collecting and treating the sewage waste of Alexandria and a portion of about thirty square miles of Fairfax county.

Then two other Sanitary Engineers, Harry Hale, Sanitary Engineer for Fairfax County, and F. H. Doe, Jr., the Sanitary Engineer for Arlington County, truly explained their present improvement programs and the attendant costs.

Now, these complete papers were printed in the 1957 publication of the Interstate Commission which has a title, an optimistic title, "Towards a Clean Potomac", and I would like to file that as in the record of the remedial works now going on in the Metropolitan Area.

NOTE: At this time the above mentioned publication was labeled: EXHIBIT P.C. 5.

MR. TISDALE: (continuing) That's all.

MR. CHAIRMAN: Are there any comments or questions on Mr. Tisdale's statement?

If none, perhaps we can get on to the next part of the agenda and that is, "The proposed remedial action including the time schedule".

Now, generally in conferences of this type, this becomes the synthesis of what we come out with and the recommendations of the conferees, and with that in mind I should like to call upon the District of Columbia Representative to speak on this point.

MR. AULD: Mr. Chairman, Gentlemen. A little earlier I outlined work now in progress at the District Sewage Treatment Plant and would like now to continue to describe other work also to be undertaken at that Plant in the immediate future. This would include the complete rebuilding of the grit chambers to which I referred before.

We found that the old chambers had been faulty in operation for many years and that malfunctioning had given us considerable trouble in our digestors. We hope to correct that condition entirely.

As a necessity growing out of the secondary sludge we will install thickening tanks, heat exchanges, additional elutriation tanks, and carry out certain repairs on our old digestors. Also, new sludge handling equipment and fast I D watering equipment will be done.

Those items together will cost the amount which I had better not take your time to add up right now, but it is in the order of -- no, I'd better not.

MR. CHAIRMAN: May I ask if ---

MR. AULD: Yes.

MR. CHAIRMAN: As you go on, and I know you may or may not be able to do this but it would be helpful if at all possible if it would be possible to assign dates to set our sights on accomplishment of these various things. Now you may, I don't know whether you would want to stake that out as a reasonable thing to do, but I think that very well may be helpful. We have found out the most helpful thing in other conferences to get these things moving both from the operation -- the standpoint that the states, the operating people and the public health service because that gives us something to move towards in the future.

MR. AULD: I will be willing to venture some dates. The figure though that I hesitated over is $2,112,000, including engineering.

All the buildings that I described will be placed under construction by or before calendar year 1958. Let me change that to say the plans will be completed and they will be advertised for bids by January 1, 1959.

MR. CHAIRMAN: They will be advertised for bids by January 1, 1959. Now maybe we could . . .

MR. AULD: No, '58.

MR. CHAIRMAN: What? You said before . . . but the calendar year, you said --- . Now, that is the plans will be completed and they will be advertised for bids on or before when?

MR. AULD: The trouble is I have different dates on different things.

MR. CHAIRMAN: Well, maybe we can . . .

MR. AULD: I took the last one in order to give you one that covers all the rest, and perhaps I should be more conservative. And, certainly the last contract will be within the next twelve months from now, whenever that is.

MR. CHAIRMAN: That is September 1, 1958.

Now that will include grit chamber if we can do that slowly. Thickening tanks, heating chambers . . .

MR. AULD: Heat exchangers.

MR. CHAIRMAN: (continuing) heat exchangers, and

MR. AULD: Elutriation tanks, sludge pumps, and handling facilities, dewatering filter repairs.

We are advertising this week for new drums, for example, on our old filters; and repairs to the sludge digestion tanks - most of which have now been completed this past Spring and early Summer. We will replace the gas seals on those and they will be, I think, as good as new.

So, that work is in our immediate program.

Now, Mr. Fisher asked how long all this was going to be effective to meet the load? The answer is this:

We have scheduled in 1961, '62, and '63 fiscal years the following additions to the sewage treatment plant: A fourth aeration tank, six more final sedimentation tanks, two more sludge thickeners, and extenstion of our dewatering building and additional filters, and incidental work for five million one hundred odd thousand dollars. That we are confident will bring this plant up to a capacity to meet the 1980 population requirement. It will be finished before the area growth is such as to excede the capacity of the facilities now under construction.

MR. CHAIRMAN: Now, would you care to be specific on a date on these items or not?

MR. AULD: I will give you for the record in a little while the program of our department for the financing of these. It is to be presumed that they will be built, let's say, or started within the year that the money becomes available in each case. And that money is foreseeable.

MR. CHAIRMAN: Yes.

MR. AULD: That takes the sewage treatment plant to the year 1980. For beefing up its hydraulics we will have an additional pump, and a new venturi meter to put in at some time within say ten years at a cost of $150,000. Those would be the plant items.

Now, earlier, I presented a report from our Board of Engineers which we received a few weeks ago. The purpose of the study made by them was to reduce pollution from the sewage system as distinct from the sewage treatment plant. And three basic schemes were considered. They were designated as schemes A, B, and C, and I would attempt to describe them to you if you'd like.

There are elements of one scheme in our construction program at this time. The District of Columbia sewer system is about fifty percent combined -- Mr. Kittrell used forty percent this morning on area, but we find that it is about fifty percent served by the combined system. We have no special problems in the separate system areas and I won't bother with them. The background map here shows the area now served on a combined basis as outlined in the red or orange lines.

About fifty percent of the District of Columbia is served by a combined sewer system and on this map it is outlined in red.

The Board of Engineers, in plan which they call A, estimated the work required to separate that system into a storm water and a sanitary system. Their plan also includes the course of certain interceptor pump line extensions, some of which are shown here, which will be necessary to meet the District's and Maryland's growth to the year 2000. The estimated cost of this work was $238,089,000. This figure includes the cost of plumbing changes in the various residences, business places, etc., as well as the parallel conduits as might be needed.

Departmentally we disagree with this figure, I say we -- perhaps it's personal. We haven't checked it too closely. But I think this is a very optimistic figure. I think if this work were attempted on this scale, that it would be nearer $300,000,000 not $238,000,000.

The board does not recommend Scheme A.

In speculating as to what was involved to carry it out, the Board said it would take not less than twenty construction gangs working continuously for twenty years to carry it into effect. It was their opinion that the disruption of business, the general inconvenience to the public would be more than the public was willing to stand and perhaps more than the public should be asked to endure. They wrote it off on that basis, also cost. And they went further to indicate that with the separation and all the expense, that they doubted that the quality of the river would be such as to permit swimming because of the rivers other characteristics - silt, bottom, and other things. They felt, therefore, that this expenditure would not be justified by the benefits to be received.

They then had a plan called B, which was essentially as you see outlined here in red tape which became the combined system except that divorcement would be undertaken in a small area in Anacostia and a small area around the Lincoln Memorial, and that divorcement previously undertaken or authorized by the District already to be carried to completion. This would be primarily in the southwest redevelopment area which I have not mentioned before. But, that is part of our program in being, -- been authorized by the Commissioners of the District of Columbia and initial appropriations for that have been received. This will be done in conjunction with the redevelopment of this important central area of the District and of course it's a bargain because all the houses are torn down there and when they are rebuilt their plumbing will be on a separate basis. So, mostly we are required to build only the street work which is the easy part of divorcement.

Under the Scheme B we would continue to completion divorcement in the Luzon Valley, which is in upper Rock Creek, and complete certain minor works in the McComb Street area. Authorized for complete divorcement work is shown here in green.

It is obvious that the present lines to Blue Plains will soon be overtaxed -- that is in a space of ten or fifteen years. Therefore, a new line must be started at Blue Plains and carried on into the city and along the edge to do two things: to furnish basic capacity for dry weather flows generated in Maryland and the District; and to relieve the overcharged interceptors which are now in service along the rivers' edge, in the most part, along Rock Creek on to the central or main pumping stations on the Anacostia River. It is the overcharge of the existing interceptor system through Rock Creek to the main sewage pumping station which accounts for practically all of the dry weather overflows of raw sewage to the river. These, therefore, would stop by the construction indicated here.

The board has suggested that in the upper Potomac section -- this is all separate up here -- that starting from here down past Rock Creek that there be thirty dilutions provided by the interceptor, and this would reduce the frequency of overflows to several times a year and the durations would go down from say 100 to 300 hours -- I don't know for this particular sewer, but I gave you the range value -- to fourteen hours a year when you have thirty dilutions.

In this stretch there would be ten dilutions provided, then five. The ten would extend to Hains Point and then five dilutions to the plant. There would be another arm to relieve the main sewage pumping stations and still another to tap the main combined sewer for the North Central and Eastern section of the citys Northeast boundry pump.

The present cost of this is $93,457,000 and we have no particular basis to disagree with this figure.

A third scheme was then suggested, and it is the third one which has been recommended.

This would include the divorcement in Scheme B, this and completion of other works started --

MR. CHAIRMAN: What is that word, divorcement? I'm a lawyer and we would call that separation.

MR. AULD: I'll clarify that. Well, we've commonly called it divorcement in our department for the many years I've been associated with it. I'm very sorry if it wasn't understood. We mean by that the separation of the combined sewers into separate systems.

In addition to the separations recommended in B, there would be separation in the upper Potomac section of the west most fringe of the combined areas. A thirty dilution interceptor would be put in through here. A five dilution interceptor would be the rest of the way down to Blue Plains. The Rock Creek trunk sewer which is a separate sewer would be reinforced as needed for future flows, that is, straight sewage.

And then in Rock Creek Park there would be an express sewer for combined sewage from the Piney Branch outlet, that is, the outlet of the Piney Branch combined sewer system expressing it on down to the system of riverside interceptors and to the Potomac. This Rock Creek relief designed, I think, for a two year frequency storm, to keep all combined flows over those intervals out of Rock Creek. That could be increased, of course, to more effectivness by greater size.

MR. WIETERS: Pardon me.

MR. AULD: Yes.

MR. WIETERS: Does that mean that you would have overflow control in the Potomac rather then Rock Creek?

MR. AULD: It amounts to that.

The price tag on Scheme C including the Rock Creek relief was $71,744,000.

It is Scheme C which has been recommended by the Board of Engineers. It is their feeling that this will give greater protection to the upper portion of the river above Key Bridge which they feel is the area most acceptable to improvement which can be controlled. It is their general feeling that extensive and larger sewers below that point with less frequent mixed overflows would not be warrented. That is, the additional cost would not be warrented because the benefit would not be commensurate.

The Commissioners have not, that is the Commissioners of the District of Columbia, have taken no position on these three plans. We, departmentally, inclined to the recommendation of the Board. I have been influenced in that because it is cheaper, and funds are mighty scarce. The benefits, I believe, would be worthwhile. I take a mental reservation -- I would not be disposed to include the Rock Creek Park relief work as any part of a municipal undertaking -- that is, financial undertaking.

The Commissioners of the District ordered a review of the entire public works program of all departments and while we did not have this report in finished form we made use of what we knew of it and adopted many elements of plan C in our construction program for the next six years -- that is, from '59 to '64.

We must always schedule sewer construction to coordinate with highway work and the District is faced with a tremendous inner belt freeway which will go around the entire city in a hugh loop and in many lateral lines. It is obvious that if you have a big sewer to build and it happens to fall in the route of one of those things if you're ever going to build it you're going to get it in before the freeway goes in.

Now, the west leg of the freeway and the new Constitution Avenue Bridge, the new Auditorium maybe, and Route 240 maybe -- all converge in this space. Having advance knowledge of these recommendations we, therefore, took what funds we thought we could get and included the shell of this pumping station -- by the way, there are pumping stations mixed in this thing as indicated by these little squares -- and the backbone of this system is here and the divorcement or separation for this area are all included in the next six years work listed by the Department of Sanitary Engineering. This listing has not received the approval of the Commissioners of the District because time has been too short. That will, I hope, come in the time. But, this is the portion of the entire relief program which we believe will be first affected by the highway program and therefore we must clear the highway route while we can.

There will be one other project of major importance for the relief of overflows which will have an earlier effect. The main sewage pumping station has a combined sanitary pump capacity of about one hundred ninety some million gallons daily when they are all working at once and there are two siphons which carry these flows across the river to the outfall sewer which connects to the treatment plant.

One of the reasons that we now get dry weather overflows and perhaps earlier mixed overflows when rains come from 27th and G Streets and in part from the eastern point area which is by the Lincoln Memorial.

The reason that those things, the main reason for it, is the inability to hold the water level in those interceptors below the weirs. And that comes back to a limit in the pumping output of that station. So, in '59, which is the first year that we could budget it and it has been in our program for some time, we have started a design of a third siphon from the main pumping station. The effect of that will be to increase the output of those pumps to about two hundred fifty or more million gallons daily. That increased output will permit the control of levels I'm certain, to substantially below these weirs and permit us to carry the very heavy summer flows, some of which now escape. That is in this program. Maryland will pay for part.

Yes, Mr. Wieters.

MR. WIETERS: Your plan would include complete separation directly above Key Bridge?

MR. AULD: Yes.

MR. WIETERS: But that is not incorporated in Plan B, which is a more expensive plan?

MR. AULD: Yes. The difference is that Plan B has the larger pipe line. They run to ten dilutions instead of five.

MR. WIETERS: But wouldn't the combination of the two - of the complete separation above Key Bridge, plus plan C make a better plan than B?

MR. AULD: Oh, I think it would. I think it would, but in the judgement of our Board, the effectivness is one thing, its value may be something else.

MR. WIETERS: Now, one other question. Do you have any guesses or estimates of the number of overflows and the duration of such overflows along the Potomac River under plans B and C?

MR. AULD: I think I can bug those out for you but I can't give it to you from memory.

MR. WIETERS: I see.

MR. AULD: One figure that I do remember is about fourteen hours a year in this stretch here where we have thirty.

MR. WIETERS: That's below Georgetown?

MR. AULD: Yes. The elements of plan C, the separation here and here and here, which are scheduled in the next six years would cost us $12,890,000. The plan improvements over the same period which are not included in either of these plans A, B, or C, which are now programmed are in the amount of $9,251,000, which makes a total of $22,141,000 in the next six years which we are now programing. All of which is directed towards pollution reduction.

Beyond that I can tell you very little. I have no funds in sight with which to build this grand connection. Not in six years. I am not sure that we will have any material benefits from the local type of the work that we would do in this area. I do think we will have material benefits up here from this even though this may not be completed. The time is such that we have not been able to develop a policy or an attack for the financing of the remainder of the program, and I would remind you that the Commissioners have not yet taken a position with respect to any program either financial or pollution wise.

I would like to put this volume on our Public Works programs in the Department in your record.

MR. CHAIRMAN: We will label this volume EXHIBIT W.C. 15.

Before we throw this open for questions, Mr. Auld, I believe we may have one clarification on the question that Mr. Wieters asked on the duration of these overflows. Did you mean a reduction from thirty times a year to fourteen times a year or thirty hours a year to fourteen hours a year?

MR. AULD: Thirty dilutions.

MR. CHAIRMAN: Thirty dilutions?

MR. AULD: I was thinking of dilutions.

MR. CHAIRMAN: Right.

MR. AULD: That really means the capacity of the sewer would be thirty times the average annual dry weather flow.

MR. WIETERS: Are the figures in this report indicating, with your five dilutions, ten dilutions, thirty dilutions, the number and durations of overflows?

MR. AULD: Yes sir. And, let me sight them for you. On frequency: five dilutions would give us a frequency between fifty and sixty times a year -- my mistake, let's make that fifty. With two dilutions or less as we have now, the frequency will be in the order of sixty to seventy. Ten dilutions will carry us down to something less than forty times a year.

MR. WIETERS: Now, your major difference between project A and B is the -- I mean B and C -- is the C has only five dilutions and the B ten? Is that right?

MR. AULD: That's right.

MR. WIETERS: That is your major difference?

MR. AULD: Yes. Now, as to duration, I might give you those effects. At five the duration would be something under two hundred hours; at ten it would be one hundred hours. Under present conditions where there are two dilutions they are around four hundred hours.

MR. WIETERS: That's per year?

MR. AULD: Per year. Now, that doesn't mean because there is an overflow that the sewer is running to capacity. You realize that quantitively these may be insignificant. Look at these gauge readings. You may have it lapping over the edge for a length or two but that's an occurance, but the quanity doesn't amount to very much.

MR. KITTRELL: This will reduce both frequency and the volume of each frequency?

MR. AULD: Oh yes, very much so.

MR. ATKINS: Have you got figures as to the quanity?

MR. AULD: No.

MR. CHAIRMAN: May we have some comment, particularly from the other jurisdictions - Maryland and the Commission, as what you might think particularly of any of these proposals with special emphasis perhaps on proposal C since that seems to be the one favored by the Board of Engineers for rather obvious reasons?

MR. AULD: May I say we would welcome any recommendations on these plans. It would be very valuable guidance to us. I don't know that these folks have had a chance to examine these exhaustively. Mr. Brown?

MR. BROWN: I'm not so much concerned at the moment with the relative value of the three plans, say the preference of C over B over A, as I am with the likelihood of their actually being initiated within the District to the Commissioners adopting them and the money being provided. What are the prospects there? Are there any predictions to be made?

MR. AULD: Yes. I think an increase in our sewer service charges will be indicated, and a certain amount of support from the general funds of the District of Columbia must be added to our sewage works revenues to do it, but under the law we may apply general fund monies to combined sewers and in these estimates I've made generous use of the General Fund monies to supplement our sewer revenues. Now that is within the scope of a program which was approved by the Commissioners and the Congress four years ago. I mean the financial scope of the program. I have not gone outside our spending expectations as stated four years ago and approved, so I think my chances are very, very good for getting the authorization to do as much as I have outlined here.

MR. FISHER: May I ask what is the sewer rental charge in the District now per a thousand gallons?

MR. AULD: Seven cents.

MR. BROWN: Will it take Congressional action to raise that or change it?

MR. AULD: It would except that we have an authority which excedes the rate which we have already set.

MR. BROWN: Sanitary Commission working for Sanitary jurisdiction its fourteen cents I believe, is it not?

MR. AULD: Yes. We can raise the sewer rental thirty and eight tenths percent administratively at low present levels and I have to raise the water rates nine percent to do it.

MR. BROWN: I understood you to say that several phases of the plan would be initiated throughout the contract as funds would be available. Is that correct?

MR. AULD: That is correct.

MR. BROWN: And you would expect then that the funds would be available as you would have need of them?

MR. AULD: Yes, and I might say that expenditures at about the rates shown in our program are just about the limit of our capacity to design and build in a restricted community. It is really very hard to spend money in a city, and ever get a clearance from the engineering to get construction done.

Mr. Chairman, I have something which would contribute something to this which is just in the nature of brainstorm and purely personal, but the Board had other recommendations which had nothing directly to do with pollution, but because the central part of the system is overcharged when it rains, this is combined system, we outlined about sixty million dollars of other relief sewers going to the central city. I won't tary you with the details, but the Board's idea was that those relief sewers would be combined. And I'm not at all certain that we could not begin to systematically make of those relief sewers a split system and penetrate substantial parts of the central combined area and use those more or less as storm water express lines taking street drainage, parks, and other areas which we encounter. To the extent that we could succeed on some such scheme as that, the interceptor system was laid out would be even more effective.

MR. CHAIRMAN: What you're suggesting and I make this of it. As I understand it, the release of it has been presently constituted and presumably for the relief of the folks back in the city would not necessarily relieve the pollution load?

MR. AULD: None whatever.

MR. CHAIRMAN: What you're going to do is translate that to private separation to make that alleviate actually the pollution load in the Potomac area? Is that right?

MR. AULD: Exactly.

MR. SCHWARZ: I think that is certainly appealing from this point of view.

MR. AULD: I take a very dim view of the possibility of ever ruling out in its entirety the combined sewers in the central city because of the plumbing changes involved. Every building has its piping all mixed up and you'd have to tear them through all the walls and floors to separate them.

MR. CHAIRMAN: Could you, perhaps, before we go into this, and this sounds like a very intriguing notion, indicate that if Plan C were adopted and translate that into terms of how that would restore water uses in the river . . . how would that affect the river? If Plan C were adopted would there presumably be enough dissolved oxygen to support a reasonable game fish habitat? Would the nuisance condition - the sludge banks and the odors be eliminated. And third, would the coliform count be reduced and the resulting health hazard be reduced?

MR. AULD: I will discuss that in parts beginning at the end.

I think that to me there would be a reduction in the coliforms, since our samples don't show too many in that zone anyhow -- out in the center channel. I think there would be benefits.

I think the sludge deposits, first of all, must be removed and after their removal I think their build-up would be very, very slow.

MR. CHAIRMAN: Given the operation of Plan C?

MR. AULD: Yes.

MR. CHAIRMAN: How about the third point on the D O?

MR. AULD: That would follow as a matter of course.

MR. CHAIRMAN: Particularly with the operation of the improved Blue Plains operation?

MR. AULD: Yes, I think we would get good D O's pretty well all the way through.

MR. CHAIRMAN: O. K. Now, I would like to get some comments from the other jurisdictions because in this situation, and I think from the Commission, in this situation far as the Federal interest is concerned our purpose is largely how this proposed improvement will affect you folks, rather than how it will necessarily help the District because that presumably is their own concern.

MR. BROWN: May I ask a further question before we get to that? I understand that the improvements contemplated embrace the District and the present Washington Suburban Sanitary District until 1980 or to 2000?

MR. AULD: This will go to 2000.

MR. BROWN: This would not contemplate handling anything in the upper Montgomery County area except sacrifice of the present Sanitary District expansion or in the District of Columbia itself?

MR. AULD: This contemplates all sewer connections foreseen in the present Washington Suburban Sanitary District wherever it goes and its tributaries to the District of Columbia. This goes all the way, I think, to - very near to Roosevelt and Olney, which is about as far as they extend now.

MR. FISHER: There has been talk of extending it all the way to the County line - Montgomery County line.

MR. AULD: We have to stop some place. There are those who say there is going to be one city along the whole Atlantic Seaboard, but I don't think we had better design for that, yet.

MR. CARY: Well, the other effect probably would be to close up on the date 2000 and bring it down, maybe, to the year 1980.

There is one whole problem in this thing that hasn't been mentioned. I hate to throw it out because it throws a sour note on what we are looking toward, but if we're talking about 80% BOD removal for the present population and a continued growth of population in the area, if we come anywheres near what the estimates are and some estimates have been as high as five million by 1975 in the area -- if we treat all of that -- if all of that population is in the sewered area and we treat all of it only to 80% we are still getting a tributary population equivalent to a million persons, by that time back in the river again and I think that somebody has got to face up to the fact that somewheres along the line there has to be some good sound research work done and some thinking on what we can do.

Now, Mr. Auld was telling us at lunch time that with a reasonable expenditure he could up the efficiency of the proposed 80% to 90%, but even at that if it gets up to 90% and he's got the five million population to deal with on that basis you've got five hundred thousand population tributary still to the river and if the population continues to grow as some of the more optimistic statisticians feel that it most assuredly will then those up river and - the situation can at some other future date again come back to the point where we are right about where we stand now.

It seems to me as though we should at least take note of that problem even though it isn't in the picture at the present time.

MR. AULD: Could I comment on that? I would agree with Mr. Cary first off, and he reminds me that I neglected to say that the plant is now being designed and built for ultimate 90% performance through the use of step aeration or activated aeration, whichever seems best at the time. But we were not burning any bridges and we can move up, and by going to 90% we cut in half BOD delivery that we have at 80%.

The other thing I might mention about the distant future is that Dr. Abel Wolman, perhaps will be heard about from Mr. Tisdale.

MR. TISDALE: I think, Dave, that you can tell that very nicely because that has been your Committee.

MR. AULD: You have the facts I'm sure and should procede, but anyhow that too is under consideration by the Interstate Commission and Mr. Tisdale, I think should comment on that.

MR. TISDALE: In as much as you have brought up the question of the future looking to the year 2000, and in as much as the discussion so far today has dealt primarly with the Maryland side; in fact that it has dealt with the integrated system of the Maryland counties suburban to the Washington District area. And, although we didn't get the story backed at all, it all goes back to the fact that forty odd years ago there was a comprehensive forward looking plan drawn by the Maryland Authorities to collect all this sewage from the tributaries of the Potomac and the District of Columbia. And through an integrated plan builds to a point for treatment. Well, that is not the situation for the entire Metropolitan Area and so it is necessary, very necessary, to consider a Master Plan or an integrated Metropolitan sewage collection and sewage treatment plant.

The Commission, as the next step, following the work of the Auld Committee of 1955, did not succeed in getting any consideration from the Congress; no Bill was enacted; no funds were made available. Therefore, when the new Federal Bill was passed and the Federal grants became available the Commission used a part of their grant for the year 1957 to retain a consultant, as you know Mr. Wolman was retained by the Commission, and he started to make a report that covered these particular items that I'd like to briefly mention -- nine items, because this is the scope of his study looking to the future comprehensive plan for pollution control in the Washington Metropolitan Area.

One. Population forecast. Land use and zoning, densit distributions, plans for dispersion of federal buildings, etc.

Two. The quantity of sewage. Domestic, combined possibilities for separation, storm water, infiltration, illicit connections, etc.

Three. The character and treatability of sewage.

Four. The hydraulics and hydrology of the Potomac River. Flows, mixing, tidal effects, etc.

Five. The behavior of river under past and present conditions.

Six. The future uses of the Potomac River. Objectives to be sought in maintaining quality of river in various reaches.

Seven. Alternate area-wide pollution control plan. Engineering, financing, administration, costs, etc.

Eight. A comparison of alternate proposals.

Nine. The political, legal, financial and administrative aspects. Recommendations as to the most suitable manner for the several interests and communities involved to finance, execute and operate those works which will serve or be served by more than one political unit.

Now, some nine months ago, Abel Wolman and associates started on that study after all of the interested jurisdictions were brought together for a discussion and were asked to cooperate and readily agreed in making all possible resources available. That included the operating departments, the planning agencies, the Washington Board of Trade that made population studies, and other groups interested in this question.

Mr. Wolman's report will be available probably in September or October. He is out of the Country at the present time.

I should like to, if it is possible, to file the scope of his report today, and if possible send to this group a copy of the report when it is available. As a substitute until it is available I would like to submit this piece of green paper.

MR. CHAIRMAN: We will label that EXHIBIT P. C. 6.

I think we have several problems here. One, I think Mr. Cary raises a very interesting point with the question of what we're doing in the future, perhaps we're faced with that problem in some areas such as Chicago now. There the city claims, at least they claim that they have 90% reduction in BOD but there is just not enough water to carry away the effluent and it is just not reasonable to treat more than that.

I think when we get a situation like that we are pushed but in the District I don't think we are faced with that situation. I think in West Chicago, for example, they make the definite claim that they are having the best secondary treatment available and they were doing all they possibly could, that we move on to consider other measures and get a serious consideration seriously by the people who are apt to move on these things. Therefore, I think, perhaps while I know this is coming and that's what we're going to have to face in the Master Plan or in the future plan, I think we have an immediate problem through the year 1980 or through the year 2000. We have an obligation to try to abate as much pollution as we can, perhaps using the traditional methods we have now.

Now, if we examine Mr. Kittrell's report where the District of Columbia is presently receiving a BOD reduction of 25%, not 90%, and Virginia communities are ranging anywhere from thirty to sixty percent we just haven't got to the ultimate in this area and have a lot to go. Now, I think we have three problems here:

One. And it is unfortunate, of course, that we do not have the Virginia communities because they presumably are contributing some load to the District, but we do have three ideas here:

One is a Master Plan; two is the work at Blue Plains and the treatment which the District will provide; and three is perhaps may be embodied in Plans A, B and C, but Plan C alleviates the conditions due to the overflows of the combined sewers and the raw sewage going into the Potomac.

Now, I think perhaps we might concentrate on those three things and see if we can come up with recommendations.

Before we do though, I would like perhaps Mr. Fisher to clarify his point on the fact that if we alleviate the fact that the raw sewage is going in Rock Creek we are going to transfer it to the Potomac.

Now, would that be satisfactory from your point of view considering Plan C or any of these plans?

MR. FISHER: Well, I don't know what to say to that. I think maybe the recreation people could give us a better answer than I could on that.

MR. CHAIRMAN: Would you care to comment, Mr. Thomas?

MR. THOMAS: Mr. Chairman, I do not think it would be satisfactory, because what the National Capital Parks is looking to now is improvement to the river where they can properly develop the waterfront of the Nation's Capital which is mostly now Federal Park land. And I have heard some of the officials express themselves in several papers presented even by the head of the Parks service that we have plans for development of the waterfront of the Nation's Capital but we hesitate to procede because we do not want to make such improvements on an open sewer.

MR. WIETERS: Just a moment now. I think there is a point here that needs clarification. I don't think it is as simple as you state, Murray. Just transferring from Rock Creek to the Potomac, as I understand this Plan B. At the present time there is some raw sewage overflowing into Rock Creek Park and none of that will go into the Potomac. That will go down into the interceptor to the plant. Isn't that correct, Mr. Auld?

MR. AULD: Your storm overflows in excess of dry weather will go into the Potomac. The Rock Creek system is now built with dilutions of from ninety-six up to two hundred times the normal dry weather flow. There is where your Rock Creek system is now built. The result is that the largest outlet functions about three times a year, and when it does the percentage of sewage in that is about one percent or a half of one percent is sewage. When you've got a three hundred dilution it just works out like that.

Therefore, the quanity of sewage now discharged into Rock Creek is not much. What the Board has proposed is that you take those varying frequencies and just move that mixed flow occasionly down to the river. I don't think anybody is ever going to find the sewage in it by the time it arrives.

Otherwise, the dry weather flow will always be intercepted by this vent system and will not ---

MR. CHAIRMAN: Let me try to translate this and try to restate it. What they're saying is that the infrequent overflows, the discharge of raw sewage, while it may cause considerable dismay in a small stretch like Rock Creek, even though it occurs very infrequently, if that were transferred to the Potomac with a large body of water it would probably go unnoticed?

MR. WIETERS: But you do have some dry weather sewage now spilling over at Water Gate, don't you?

MR. CARY: Yes sir.

MR. WIETERS: Which will be corrected under either Plan B or C? Which will all be intercepted and taken down to Blue Plains?

MR. Auld: Yes. We have stop-gap approach even to the short range water gate which I haven't mentioned. We have short circuited the system up in the Central part of the city and tried to lead away part of the flows that used to go down there. I think we will include an application to the Public Health Service for Federal Aid in the rebuilding of the control chamber there which is too small for present flows. I think between those two we have stopped the dry weather flow right there.

MR. WIETERS: And that should improve the situation in the Potomac.

MR. CARY: Oh yes.

MR. WIETERS: Very substantially.

MR. CARY: Esthetic.

MR. WIETERS: Yes, esthetically.

MR. AULD: I think that's the worst part of it.

MR. CARY: I just checked with Mr. Brink. We've been running for the last couple or three years samples on Rock Creek and he tells me that the dry weather flows we're getting D.O.'s about seven or eight and relatively low coliform index, but during storm water time when you are getting these overflows that they are reflected in the bacteriological count.

MR. BRINK: That would be the land wash and everything else.

MR. CARY: Yes, it has the whole problem and, of course, the problem there now is primarily siltation. That stream turns from a rather clear stream flowing over a rocky bed into one that you wonder how they ever get the mud washed out from between the rocks when it starts to clear up again.

MR. CHAIRMAN: Mr. Thomas, I would like to ask you several questions. You know as far as the Federal government is concerned the law states that we just have jurisdiction when it has to be pollution of interstate stream and I think that is pretty well indicated because the Potomac is an interstate stream. But it must originate in one state and affect the health and welfare of persons in another state.

Now, so far you have outlined and talked about a discharge from the District which would impede development of Park Development presumably within the District of Columbia.

Now, could you say that this proposal that Mr. Auld has made would have any effect on your future plans for Park Development located in Maryland or Virginia?

MR. THOMAS: It would have effect on developments in Maryland which would be the lower bank of the Potomac along the Mount Vernon Highway.

MR. CHAIRMAN: Now I don't want to quibble on this, but you mean the Mount Vernon Highway on which side -- on the Virginia side?

MR. THOMAS: The Virginia side.

MR. CHAIRMAN: The Virginia side. Well, why would that be Maryland?

MR. THOMAS: Well I meant the load of Washington would be Virginia side but Maryland would be involved because Maryland controls to the high water on the Virginia side.

MR. CHAIRMAN: That's right.

MR. THOMAS: Now you have both Maryland and Virginia Authorities concerned there outside of the District, would you not?

MR. CHAIRMAN: That's correct. That is what I wanted to ---

MR. THOMAS: So you see you'd have three states involved.

MR. CHAIRMAN: You say that if Plan C went into effect that there would be conditions in the Potomac River where you could not make the full use of National Park development down the Mount Vernon Highway side of Virginia. In what respect would that impede your development?

MR. THOMAS: Well, because we are planning to build a motor boat Marina there, and we have considerable objects of sewage origin collecting in that boat Marina at the present time.

MR. CHAIRMAN: Well, do you think that if Plan C were put in operation you would still have those objects of sewage there?

MR. THOMAS: I wanted to ask Mr. Auld that question. If Plan C would eliminate all objects of sewage origin in the floatage on the river by the plan from the discharge from Rock Creek at all times during the summer season?

MR. AULD: Oh, by its very nature it couldn't be expected to do that. You'd have to have a hundred percent containment which is not proposed.

MR. CHAIRMAN: Is that proposed even in Plan A?

MR. AULD: Yes.

MR. THOMAS: Well, that's the problem that faces the National Capital Parks also with the development of the Tidal Basin at the present time. We have a lot of water sports activities on the Tidal Basin which are confronted with a lot of floatage which is something that we get complaints from people from all the states that visit Washington because the Tidal Basin is not maintained in a cleaner condition.

MR. McCOMAS: I'd like to ask a question along those lines. What control is exercised over the owners and operators and occupants of the boats themselves? Very often they are big contributors.

MR. THOMAS: I do not think, Mr. McComas, that is a big problem in the Washington area, because most of the three hundred to three hundred fifty boats now docked at the Columbia Island Marina take out and go down the river on most of their trips, and go down the river for their water sports activities.

Now, the water sports activities which are held within the Washington area -- those sports are on the river from the area of Hains Point to Key Bridge which is not an area used by most of the motor boats that are docked in the motor boat Marinas of the District.

MR. McCOMAS: Do they stay on the boats in the Marina?

MR. THOMAS: Oh no. They are only -- we have about three hundred fifty slips at the present Columbia Island Motor Boat Marina and we have about one hundred thirty five ---

MR. McCOMAS: Is there any method for disbursing of garbage or sewage within the boat or does it go overboard?

MR. THOMAS: No. That is checked pretty carefully by the Park Police to see that there is no disposal overboard.

MR. CHAIRMAN: Mr. Schwarz would you step up to the microphone?

MR. SCHWARZ: I was going to come back for a moment to the far distant future because as far as I'm concerned that is quite close. When you speak about major impoundment structures fifty years is a small time so we should think at this moment, will we need a greater than 1000 cfs flow for the distant future because if we wait for fifty years and then think the expansion of the Metropolitan Area and all the other areas throughout Maryland, Virginia, West Virginia, because we probably have filled up any reservoir site with houses you can look at, so we can't quite push it completely out of our considerations for the distant future.

MR. CHAIRMAN: I think you have a very good point there, and I think perhaps if we could try to take some of the relatively easy ones first and try to come to an agreement.

I think Mr. Auld has outlined a program of improvement at the Blue Plains Treatment Plant. The group concluded not later than 1959 which would improve the D. O. and the BOD conditions of the river, at least the river in terms of that - certainly the river translated into terms of water uses. I think the work is underway for that or will be underway. Now, is that program satisfactory to the other Conferees here? That is the work that is presently being contemplated and going to be done on the Blue Plains Plant?

MR. BROWN: Very satisfactory. I would say so.

MR. CHAIRMAN: Right. Now, the second point I think is this question of the assumption that all this work at least is predicated on a minimum low flow of a 1000 c.f.s, would you say to be kind of definite, past at least the point where Blue Plains discharges - past the Blue Plains output.

Now, do you think that the Conferees should plan with that recommendation? Would you want to up that recommendation or would you want to be silent on that point, in the planning whether the Conferees should make a determination as to the minimum low flows going past Blue Plains? And I think that necessarily will take into account the Virginia jurisdictions too because we can't keep the weather on one side of the river.

MR. SCHWARZ: I would like to say something before the Conferees say something about this. The statement of that fact would be very, very important because it would become to a large extent our guidance in development for the Potomac. And you know how slow things move and how long major projects take. When we have set a guide it will take a long time to change it again. So I earnestly hope that the Conferee's opinion will be something we can live by for a long time in the future.

MR. BROWN: May I comment, Mr. Chairman? With regard to the discussion that we have had today 1000 c.f.s. might appear to be adequate with regard to the present and contemplated needs of the area about which Mr. Auld has presented information specifically. I do not, however, on the basis of impressions regarding potential development in the upper county area think that we should go on record as saying that is going to be satisfactory. The development which is taking place and will certainly take place in these upper county areas on the Maryland side and which may take place on the Virginia side are going to have tremendous impact on this program in the future and should be much more carefully evaluated, I believe, before a decision on that particular point is reached.

MR. CHAIRMAN: I think that is a very valid point. Does anyone else want to say anything on that? Mr. Auld?

MR. AULD: I would like to point out that the flow is not a -- that is, the ability of the river to assemblate BOD is not in direct porportion to the flow past the plant; that going back to the Niles' Study, it was his belief that three parts per million minimum could be retained at a 1000 second feet with a total delivery of 121,000 pounds of BOD per day. I say that may be disputed. Anyhow this was his finding.

If you double the river flow you increase its capacity to absorb BOD by but two percent - that goes up from 121 to 123 thousand pounds. If you would double its BOD delivery you must then increase the flow by something more than thirty thousand second feet. That's way out - anything you're thinking about.

MR. SCHWARZ: The Potomac cannot deliver that?

MR. AULD: No. I think that's important to you considering its length.

MR. CHAIRMAN: Well, I would think and this perhaps goes back to the next point that one of the keys to this problem, and I think it would be particularly appealing because I think the Virginia Committee should be represented in here, is that a Master Plan may very well be in order for the Metropolitan Area of Washington.

Now this Master Plan might or should be a general plan to maintain reasonable conditions in the river at a reasonable cost. It should include a financing and construction schedule and perhaps that plan could include the requirement of dilution water. Whether those requirements can be produced at a point, and I am just speculating here, right up past Blue Plains and maybe you will have to in order to get the sufficient dilution water if you are going to increase, given the population growth and the maximum Federal kind of treatment we can have - whether you may have to put your effluent in a place where there is a lot more dilution water, perhaps below Hallowing Point, I don't know, but I think the Master Plan, at least, might have come up with those specifications and I don't know if it would be much of a plan if it didn't have that except in the general plan -- that is the three points: One - a financing schedule; two - a construction schedule, which is almost A and B of the same thing; and three - where the dilution water is going to come from to put the effluent into.

Now, if we decide or you think that that Master Plan is a good motion I think we might think in terms of the

Conferees possibly recommending a date that we could put out for the proposed adoption of that Master Plan so we will have a target to shoot for, because again as I say we have the problem here of the Surgeon General after the Conference of having to make a determination whether effective progress is being made toward abatement of pollution, and I think in dealing with state programs and various programs unless we have the states for certain progress to take place we just don't know and have nothing to judge by.

Now, I don't know what you might think of that notion and maybe we should have a little discussion on it.

MR. CARY: I would like to go back one point if I could before you get into this change and come to something that Dave talked about, something that he and I and some of the other folks have discussed from time to time -- this ability of the river to absorb pollution in this Metropolitan Area is in my opinion being rapidly changed. A lot of that ability depends upon the amount of aquatic vegetation, the tidal flats, and things of that sort. We are continually changing the topography of the river in the Metropolitan Area and will, in my opinion, continue to change it. The tidal flats will disappear -- they will be filled and their usefulness as natural basins for the reception and care of these waste products is going to disappear because of their value as park sites, their value as building areas, value as airport sites since they have disappeared some of them for that purpose and many other uses. And that is going to change this whole business as far as dilution is concerned.

And we may see more of a confined stream instead of the characteristic marshy tidal wash that we have in some of that area now. So it seems to me as if we're going to take into consideration all of the factors that enter into the need for dilution water that we can't escape the fact that the growth of population is not only increasing the pollution load itself but it's reducing the ability of the stream to accept that load.

MR. CHAIRMAN: I would think that that is a very valid point, but wouldn't you think, Mr. Cary, that this might be properly more determination than the preparation of this Master Plan?

MR. CARY: I'm not trying to make a determination -- I'm trying to merely point this up as one of the other more valid reasons for what you're coming to now -- the preparation of a Master Plan for the whole area?

MR. CHAIRMAN: That is correct. Now, what I would like us to do if we possibly can is to think in terms of date perhaps for the preparation and the adoption of this Master Plan.

Now, maybe that isn't as far off as some of us might think. I think we have alluded to the Wolman report; I think the engineering report that Mr. Auld has put in the record certainly presents at least pieces of this Master Plan -- pieces that could be readily adapted to fit into the Master Plan. Now, I think we do have a situation here and I'll just put this out as Chairman for a period of discussion.

Do you think that it would be possible for the Conferees to come to the conception that a Master Plan for the Metropolitan Area be prepared and completed not later than September 1, 1958? A little more than a year from now. Do you think that is reasonable?

MR. CARY: Be prepared by whom?

MR. CHAIRMAN: Now we're getting to that. We have several possibilities. Certainly, the Potomac Commission seems to be an ideal vehicle for the preparation of this Plan and maybe it can be done under their leadership. The other possibility is that we can have that perhaps prepared and adopted by the individual jurisdiction; and the third possibility is that the Conferees and the continuation of this Conference under the Federal law may wish to constitute themselves as a techinical committee for that preparation.

Now, we have several possibilities, but I think that we are all agreed that the Master Plan possibly is desirable. I think - one, we have to provide a mechanism in a group which will take upon itself to get the thing going; and secondly, to set some target dates, and I will entertain any suggestions on that.

MR. CARY: Mr. Chairman, I would like to have you if you would, stake out this plan - that is stake out what you call a Master Plan. I think you would have to stake out what you are talking about before you can actually ---

MR.CHAIRMAN: Well, I think it will take off largely from the main point that Mr. Tisdale has put in the record. That Master Plan will be amplified by coming up with definite objectives for the Metropolitan Area of Washington including proposed construction. That will include definite recommendations as to the type of construction needed; a construction and financing schedule; and the dilution water needed to draw the effluent, or the characteristics of the river needed to absorb the effluent. I wouldn't just want to put it in a quantitative sense.

MR. TISDALE: What area would it cover?

MR. CHAIRMAN: The Metropolitan Area of Washington. I think we have a situation here where we have defined the problem fairly well. Where a relatively clean stream is coming into Washington and we know that while it's here and before it leaves it gets powerfully dirty. I think we have a severable case that we can work on.

MR. TISDALE: Do you mean, Mr. Chairman, by a Master Plan the engineering outline of the lines to bring the sewage to necessary points for treatment from the treatment works -- that is, the implementation of what we might say the Wolman report?

MR. AULD: Yes. We believe the Wolman report is going to be a comprehensive plan for controlling future pollution.

MR. CHAIRMAN: That is correct. No, that's what I think in a sense, Mr. Tisdale, we do mean, because I think we have had experience and I know the states have had experience in giving these pollution problems another airing and until we get a situation where the community -- and I don't know that we need the details like that necessarily -- until we get a commitment from a community where they are going to have - come up with three figures. One - the date they are going to complete final plans and specifications. The date that they are going to have their financing arranged; and the date they are going to award their construction contracts. And that is all that we should be interested in when we can't move, but I have never found a community yet where they could come up with these three dates unless they have gone through something like Dave Auld has gone through here. You just can't come up with it. I think we are pipe dreaming if we think we can come up with states without that.

I think that's what we are shooting for. Certainly that's what people want to know. I think that's what we have to do as a Federal Agency and perhaps you folks do as Pollution Abatement Officials, indicate to the people of the communities those dates so we can get moving - so the people can really check on us and see if we are cleaning up the river in accordance with our target dates.

Now what do you think of that?

MR. BROWN: If I might comment -- just at the moment I am a little bit overwhelmed by not being able to give a direct answer on that. I would hate to see us proceed with too great haste this afternoon in jumping to conclusions that we might not be able to follow through on.

MR. CHAIRMAN: That is correct.

MR. BROWN: To appoint -- let me just think out loud a minute with regard to what we might do.

I personally appreciate exceedingly the nature and directness of the information that we have gotten concerning the D. C. problem from my colleagues from the District, and I especially appreciate the candor and straightforwardness with which it has been given to us. I think it is going to be particularly helpful if as we go into the further aspects of the Conference.

I think that to a certain extent we must await results and that there is little that we can do as I see it at the moment to accelerate anything even if we saw a need and determined to do something.

Could this be a possible course of action on our part? To receive at the earliest feasible time the proceedings of this Conference perhaps in summary form with a statement of conclusions which we then could review at somewhat greater leisure than we have this afternoon, and as you asked what was our reaction to the A, B and C proposals we could then say yea or nay after we had the opportunity to consider everything in the detail that we would wish.

This would contemplate perhaps our coming together again at some time in the not too distant future to work out a bit more details on this further thing - this further procedure that you have been discussing, Mr. Chairman, and I seem unable to cope with at the moment.

MR. CHAIRMAN: I think that is a reasonable alternative. Let me try to get this down to a proposal and see if the Conferees are agreeable.

I think we have relatively thought of what we can do as a proposal and I am just trying to put this into proposal form as I understand Mr. Brown.

Presumably, we can call this Part I of the Conference adjourned possibly to a particular date. For the summary we can summarize what was done here in the questions.

For the summary today, I think we are all agreed as I get the consensus, and we can review that very rapidly, on what the situation is in the Potomac area, where the discharges are coming from; what the effects are in general terms. We can also indicate our judgement perhaps on Mr. Auld's proposal for his remedial action at the Blue Plains Plant.

Now. We have two other problems. One is a proposal for developing a mechanism for getting a Master Plan a little beyond the comprehensive plan which I know the Commission is going to come out with where we can come up with specific recommendations as to construction and financing schedule. We can also give some more thought to the proposals which Mr. Auld has brought up, which are epitomized by Plans A, B and C and that is I think the dealing with the problem of the sewage which comes into the Potomac other than that coming out of the Blue Plains outfall. Now is that reasonably translating the proposal into a future action for the Conference, Mr. Brown?

MR. BROWN: I feel so.

MR. CHAIRMAN: Now I would also like to, if we could, to set a date for future reconvening if that is agreeable in the not too distant future so we don't lose this and we keep this moving.

MR. CARY: Isn't any other date contingent on certain other things? For instance, it would seem to me that any date that would come ahead of the report by Dr. Wolman would be a little bit premature. There is that date that I can think of definitely. There may be others that Mr. Auld, for instance, knows of; or Brown or Tisdale with respect to other things that are in the making at this time that might have a considerable affect on anything that would be added to today's meeting.

MR. CHAIRMAN: May I make a suggestion on that and I don't know -- this is just thinking out loud again. Can we set as a tentative date, and this is almost like setting a religious holiday I guess, perhaps a month after the Wolman report is released or as close to that date as we can get mutual concurrence of the Conferees.

MR. CHAIRMAN: (continuing) What do you think of that?

MR. BROWN: Will the summary of this meeting be distributed?

MR. CHAIRMAN: Yes. We will distribute the summary -- and not that I want to put you on the spot Mrs. Christian, but as you can gather we've had this experience and this isn't meant to be taken wrong -- we prefer to have the transcript in our hands before we release the summary to be absolutely certain of accuracy and we give you the transcript and the summary at the same time.

Now, transcripts such as this aren't prepared overnight as you can appreciate. As soon as that transcript is prepared our experience has been that we get the summary out within three days. And we will do that.

Now, if that is the consensus of opinion perhaps I can summarize here and you almost know what is in the summary. Do all the folks generally agree to that as a general consensus?

MR. CARY: Let me just add one point here. The Corps of Engineers has a considerable interest in anything that we might do and in the way of action in this area because of their pending report and study. And the point developed that they're like most of the rest of us - they've got money enough to keep living on but they can't afford to die - can't get buried and they need to have things handed to them as best we can and I think that that's some factor in how this thing comes along. That is, it would depend again on the extent of Dr. Wolman's Report and how much time might be needed to study it. It would take fifty days instead of three days.

MR. CHAIRMAN: I have another suggestion here. Three months. Now let's explain that. I purposely did that in a way to get a reaction, but I think, let's modify that and I think we can ---

While I summarize, this summary is open to modification as I go along, of course, and I will in a moment.

Let's say within three months after the report we will meet. Not longer than three months.

MR. AULD: I think we should meet before the holidays at the end of the year, if we can.

MR. CHAIRMAN: Well now you're getting to the reason for my professional business - I begin getting cautious because the publication of the Wolman Report is a contingency over which no one here has any control, as far as I know.

Now, for very valid reasons that might be delayed and that just might come out December 24th. I mean, I'd hate to sign a contract like that when I don't have the control over the conditions preceding. And I think we have to give ourselves a little flexibility on when that report comes out.

Let me try this summary, open for modification as I go along, and see what we can come out with.

I think the Conferees agreed that the Potomac River between Chain Bridge and Hallowing Point, Virginia, runs along between the bounds of the District of Columbia and Virginia and Maryland; that the river before it reaches this stretch is in relatively clean condition. Pollution of this reach of the Potomac River is caused by the discharge of untreated and partially treated sewage to the Potomac River and its tributaries.

These discharges originate in the following major areas: Alexandria, Virginia; Arlington County, Virginia; District of Columbia; sewage from the Washington Suburban

Sanitary District, Maryland, as treated in the District of Columbia plant; and Fairfax, Virginia.

This pollution contributes significantly to:

One. Increased concentration of coliform and other organisms associated with human diseases which constitute a health hazard to commercial and recreational uses of the river.

Two. Deterioration of water quality to the extent that severe sight and odor nuisances have been created due to floating solids and sludge deposits resulting in serious impairment of the river as a residential and sight-seeing and recreational area.

Three. Impairment of water quality so as to render the river unsuitable as a habitat for game fish.

That the District of Columbia presently has under way a program to increase the efficiency of the Blue Plains Treatment Plant. That not later than September 1, 1958, detailed plans and specifications will be completed and contracts will be let for work which will improve the operating efficiency of this plant so as to result in a reduction of the BOD of approximately 80%.

These improvements will include the construction of thickening tanks, heat exchanges, elutriation tanks, sludge pumps, and handling facilities, dewatering filtering repairs, and repairs to sludge digestor tanks.

That the District of Columbia has in addition under way plans to modernize the Blue Plains Plant which, if carried into effect, will keep up the demands made on that plant up to approximately the year 1980.

And we won't specify this - I think we have two choices here. We can indicate that soon as specific dates and plans are set up you will report to the Conferees or we might include that -- Do you want that on the other?

MR. CARY: Any way.

MR. CHAIRMAN: That would be easiest.

And, that as soon as possible the District of Columbia representatives will report to the Conferees as to the dates that they expect plans and specifications to be completed for this work and contracts to be let.

That the Conferees agree that the meeting held today will be the first part of the Conference and the Conference will be reconvened about three months subsequent to the publication of the report now being undertaken by Professor Wolman in accordance with the specifications of the Potomac Interstate Commission or as close to that date as can be mutually agreed to by the Confere

At this later meeting discussions will be held as to the feasibility of preparing a Master Plan for the control of pollution in the Washington Metropolitan Area, such a Master Plan to include a financing and construction schedule and the ability of the river to absorb effluent.

In addition, the Conference when it reconvenes will consider the proposals made by the Board of Engineers working with Mr. Auld in the District on the feasibility of plans to control the discharge of untreated sewage into the Potomac River from sources in the District other than from sources in the District.

That's about it. Now is there any other ---. Sewage overflows - we will modify that.

MR. KITTRELL: You left out chlorination -- Operational chlorination at the --

MR. CHAIRMAN: Let's check with Mr. Auld. Do you want to put that in? That in the '58 program that the District of Columbia plant at Blue Plains will resume chlorinating the effluent. The chlorination of its treatment. Or would you rather not?

MR. AULD: I'd just take chlorination as a matter of course like we do all the other things pertaining to treatment.

MR. CHAIRMAN: O. K. Now let me make one other suggestion. I think this is for the Conferees. I think it would be important, I mean should be abundantly obvious, that this would be improved immeasurably if Virginia could attend at least the second session of this Conference. I think if it is agreeable to the Conferees, of course, they should be kept advised of what went on here during the first session.

MR. TISDALE: I think it would be highly desirable to send them a copy of the proceedings of the Conference and use every device known in persuading them to attend the second Conference.

MR. CHAIRMAN: Thank you. I think we may make that as a recommendation.

MR. BROWN: I want to ask a question - I don't mean to be picky, but in your summary you referred in the first part to our considering the coliform levels and something about disease organisms or something of the sort?

MR. CHAIRMAN: No. Associated with - well I can give you the exact word for that and see if you want that ....

I said that this pollution presently existing in the Potomac contributes significantly to increased concentrations of coliform and other organisms associated with human diseases. Do you object to the "other organisms"?

MR. BROWN: We haven't made any determination on that point and I ---

MR. CHAIRMAN: That would be associated with the coliform group. We could leave out the "other organisms" if you would want to. I think that's fair enough.

MR. BROWN: I would suggest so.

MR. CHAIRMAN: O. K.

MR. CARY: Better not associate coliforms with --

MR. CHAIRMAN: That's right. Looks like we put in the "other organisms" because we thought it is sort of indicated. I mean this is rather carefully done and was developed by some of our most pure minded scientists-that's why I had this here. They don't like just coliforms alone. I don't know but I think the meaning of that is pretty clear and I'm certainly not going to pick on that point. We can surely adjust that.

Are there any other comments that anyone wants to make? Mr. Auld?

MR. AULD: I feel that three months is a very long time for us to take in the evaluation of the Wolman report. Oh well, if that's what you want --

MR. CHAIRMAN: Well, the way we have it is not to exceed three months and if we - I think the way we will work this is that we will try to get this at a date mutually agreeable to the Conferees, not to exceed three months. If the Conferees have the notion that they are prepared to confer earlier, we will do it at the earliest possible date.

MR. CARY: We have another consideration here. Maybe Mr. Tisdale can answer this one for us. We kind of assumed on that basis that the Wolman Report was to be made available to all of the Conferees.

MR. TISDALE: You see it is going to be printed immediately when we get it, the plan of the Commission and it will be as good a job as can be done and then it is going to be printed in enough copies so that everyone may have a copy.

MR. CHAIRMAN: I was thinking that maybe the Commission might hold it until a special meeting or something of that sort rather than make it available right away.

MR. AULD: Never.

MR. CHAIRMAN: Does anyone else have any comment of any kind or any statements to make?

MR. CARY: Mr. Chairman, I'd like to check with the people here from the District of Columbia to see if any of them have anything to add. Mr. Kraft?

MR. KRAFT: Nothing, thank you.

MR. CHAIRMAN: Mr. Brink, you haven't said a word all day. Mr. Thomas? Dave, did you have anything you wanted to ask?

MR. AULD: Since there has been some question as to what Scheme C would accomplish and I have said little on that, let me tell you what the Board said.

First of all the Board recommends that work be started forthwith when project C, is outlined. And project C would clean the upper Potomac above Georgetown so that it could be used for swimming if adequate abatement of pollution is provided outside the District and also for other recreation upstream of Key Bridge, after completion of conversion, etc.

I think that's a point I would just like to put in there.

MR. CHAIRMAN: I would, and I want to express I'm sure for all the people here our appreciation, Mr. Auld, of your masterful presentation of that and the other material.

Now, I think the only reason perhaps we couldn't come to grips today is that that is relatively new to most of the Conferees and it's almost overwhelming, and I think I'm speaking for all the folks here, if not to say that Plan C may not be the most reasonable and feasible plan in the world.

But I think the folks might want to digest it a little further and go along now. I'm sure that if the other jurisdictions were this far along in their planning we would not have too much to worry about in the future clean-up of the Potomac.

Now, Mrs. Christian, I would like to thank you for all of us here for coming and working with us today. I know it has been kind of hard and I'd like to thank all of you for coming. It has been a very pleasant Conference and I know, at least speaking for myself, I've gotten a lot out of it.

Did you folks want to say anything?

Well, with that I think we will call the Conference to a close, and thank you folks very much for coming. We don't mind if you rush out - we know you have to check out of the hotel.

Conference Concluded

NAME	TITLE
Murray Stein	Chief, Interstate Enforcement Section Water Supply & Water Pollution Control Program Public Health Service Washington, D. C.
Alfred H. Wieters	Program Consultant Water Supply & Water Pollution Control Program, P.H.S. Washington, D. C.
Lawrence M. Fisher	Member, Interstate Commission on the Potomac River Basin Washington, C. D.
Ellis S. Tisdale	Director, Interstate Comm. on the Potomac River Basin Washington, C. D.
Robert M. Brown	Chief, Bureau of Environmental Hygiene, Maryland State Dept. of Health
Paul W. McKee	Director, Maryland Water Pollution Control Commission
James R. McComas	Public Health Engineer, Dept. of Health, Maryland
David Auld	Director of Sanitary Engineering District of Columbia
William H. Cary, Jr.	Chief, Bureau of Food and P. H. Engineering. D.C. Dept. of Public Health
Lloyd W. Gebhard	Assistant Regional Engineer, P.H.S. Region III, Charlottesville, Va.
F. W. Kittrell	P.H.S., Robt. A. Taft San. Engg. Center, Cincinnati, Ohio.
C. H. Atkins	Regional Engineer U. S. P.H.S., Region III Charlottesville, Va.
John V. Brink	Public Health Engineer, District of Columbia Department of Public Health.

NAME	TITLE
Sidney Edelman	Office of General Counsel Department of H. E. W. Washington, D. C.
Gordon McCallum	Chief - Water Supply & Water Pollution Control Program Public Health Service Department of HEW Washington, D. C.
Richard H. Kraft	Nat'l. Capital Planning Comm. (Regional Planner - Regional Planning Council)
John B. Thomas	Public Health Engineer Consultant National Capital Parks
Harry E. Schwarz	Chief: Potomac River Section U.S. Army Engineer District Washington
Raymond J. Karpen	Col. USA, AEHL, Army Chemical Center, Md.
Thomas R. Ostrom	Capt. USA, AEHL, Army Chemical Center, Md.
James S. Keat	Baltimore Sun Baltimore 18, Md.
Boyce Loving	Daily Progress Charlottesville, Va.

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EXHIBITS

No.	Title
F.C. 1	A Review of Interstate Pollution, The Potomac River in the Washington Metropolitan Area - June, 1957.
P. C. 1	"A Clean River for the Nation's Capital"
P. C. 2	A Report on Water Pollution in the Washington Metropolitan Area - Section II -Technical Report -February, 1954.
P. C. 3	A Report on Water Pollution in the Washington Metropolitan Area - Section III - Appendixes, February, 1954.
P. C. 4	Proposed Over-All Administrative and Legislative Plan for Abatement and Control of Potomac River Pollution in the Washington Metropolitan Area.
P. C. 5	Towards a Clean Potomac.
P. C. 6	News Letter - Interstate Commission on the Potomac River Basin - November, 1956.
W. C. 1	Laws and Regulations of the District of Columbia Pertaining to the Control of Stream Pollution.
W. C. 2	Chart - Sanitary Discharge to River.
W. C. 3	Chart
W. C. 4	Report of Operation of the District of Columbia Sewage Treatment Plant, Fiscal Year - 1957.
W. C. 5	Temperature Chart - D. C. Department of Sanitary Engineering Sewer Operations Division Sewage Treatment Plant.

EXHIBITS

No.	Title
W. C. 6	District of Columbia - Pollution of Potomac River - Required Degree of Treatment - Thomas M. Niles - September, 1956
W. C. 7	Agreement No. DCF A-
W. C. 8	Statement of Sewage Works Fund.
W. C. 9	Report to David V. Auld, Director of Sanitary Engineering District of Columbia Upon Investigation of Sewerage System - June, 1955.
W. C. 10	Report to District of Columbia Department of Sanitary Engineering on Sewage Treatment Plant - October 31, 1956.
W. C. 11	Report to District of Columbia Department of Sanitary Engineering on Improvements to Sewerage System - February 28, 1957.
W. C. 12	Population Estimates --1956 - 2000
W. C. 13	Policies for a Regional Land Use Plan for the National Capital Region by John T. Howard, Consultant, November 5, 1956.
W. C. 14	Resolution of National Capital Planning Commission National Capital Regional Planning Council - December 13, 1956.
W. C. 15	Public Works Programs as amended April 29, 1957 - Fiscal years 1959-1964 Inclusive, Department of Sanitary Engineering, District of Columbia Government.

B.

TRANSCRIPT OF CONFERENCE
(Second Session)

POLLUTION OF INTERSTATE WATERS

OF THE POTOMAC RIVER IN THE

WASHINGTON METROPOLITAN AREA

Washington, D.C.
February 13, 1958

B-1

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE

- - -

CONFERENCE ON POLLUTION OF INTERSTATE WATERS of the POTOMAC RIVER IN THE WASHINGTON METROPOLITAN AREA

- - -

SECOND SESSION

- - -

Auditorium
Health, Education and Welfare
North Building
3rd and Independence Avenue
Washington, D. C.

February 13, 1958

The conference was called to order at 9:45 o'clock a.m., Mr. Murray Stein, Chairman, presiding.

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PROCEEDINGS

THE CHAIRMAN: The conference is in session.

This is a conference in the matter of the pollution of interstate waters of the Potomac River in the Washington metropolitan area, including the jurisdictions of the District of Columbia, Maryland and Virginia. It is being held under the Federal Water Pollution Control Act, and in accordance with the terms of that Act, was called by the Surgeon General of the Public Health Service.

The purpose of the conference is the bringing of the States of Maryland, Virginia, the District of Columbia and the Interstate Commission on the Potomac River Basin and the Public Health Service together to review the existing situation, the progress which has been made, and to lay a basis for future action by all parties concerned, and to give the States and localities an opportunity to take any remedial action which may be indicated under state and local law.

The conference technique which we are employing today is rather an old one. As a matter of fact, it is used by many state agencies informally in the usual conduct of their business in the field of water pollution control. The conference mechanism long ago was proposed by the United States Supreme Court in the famous case of New York and New Jersey involving interstate pollution. The Court said, as far back as

1921:

"We cannot withhold the suggestion inspired by the consideration of this case, that the grave problem of sewage disposal presented by large and growing populations living on the shores of New York Bay is one more likely to be wisely solved by cooperative study and by conference and mutual concession on the part of representatives of the states so vitally interested in it, than by proceedings in any court however constituted."

These views seem to be particularly applicable to a complex situation, such as we have in the Washington metropolitan area.

Under Section 8 of the Federal Act, the Surgeon General has notified the official State and interstate water pollution agencies of this conference. These agencies are the District of Columbia Department of Health, the Virginia State Water Control Board, and the Interstate Commission on the Potomac River Basin. Under the law, this is the conference between these official agencies and the Public Health Service. The official agencies are privileged to bring whomever they wish to the conference and have them participate in it. Both the States and the Federal Government have responsibilities in dealing with water pollution control problems.

The Federal Water Pollution Control Act declares that the States have the primary right and responsibility for taking action to avoid interstate pollution.

It has always been the policy of the Public Health Service to recognize this traditional role of the States. The function of the Public Health Service is to encourage the States in these activities. However, the Public Health Service is charged by law with specific responsibilities in connection with interstate pollution control problems.

The Federal Water Pollution Control Act provides that the pollution of interstate waters, which endagers the health or welfare of persons in a State other than that in which the pollution originates, is subject to abatement. When the Surgeon General believes that pollution is occurring, he is required to call a conference of this type. This has been done with reference to the Potomac River in the Washington metropolitan area.

Under the Federal Act, the Surgeon General is required, at the conclusion of the conference, to prepare a summary of the conference, which will be sent to all the conferees, The summary, according to law, must include the following:

1) Occurrence of pollution of interstate waters subject to abatement under the Act; 2) adequacy of measures taken toward abatement of pollution, and 3) nature of the

delays, if any, being encountered in abatement of pollution.

It is suggested that the conference discussions be directed toward discussing these points, so that we may prepare a servicable summary and conclusion.

In addition, the law requires the Surgeon General to determine, at the conclusion of the conference, whether effective progress toward abatement of pollution is being made. To aid the Surgeon General in making this determination, it is strongly suggested that the conferees agree upon the time schedule of remedial action, if indicated. Such a time schedule, of course, should be a realistic and reasonable one.

Now a word about the procedures during the course of the conference. A stenographic report is being made of the proceedings for the purpose of aiding us in preparing a summary and also of providing a record of what was said and done here. We will make copies of the transcript and the summary available to the conferees.

An agenda has been distributed to the conferees. The agenda is to aid us in directing our discussion toward the points required to be covered by law. However, the agenda can be adjusted to meet particular situations as they arise.

All the conferees will be called upon to make statements. The conferees, in addition, may call upon the participant they have invited to the conference to make statements. At the conclusion of such statements, the conferees will be given an opportunity to comment or ask questions, and at the conclusion of the conferees' comments or questions, the Chair may ask a question or two, also.

Now, this, as you probably know, is the second session of the Conference on the Potomac River. The first was held August 22, 1957 at Charlottesville, Virginia. Much was accomplished at that conference. As a matter of fact, you can see the exhibit back there which was presented at that conference.

Data presented there has been thoroughly analyzed in the interim by the conferees. At this conference, all parties agreed on just what the pollution situation was specifically, just where the sources of pollution were, and the water uses interfered with. The conferees, at the first session of the conference concluded and came to the following conclusions and recommendations:

1. That pollution of interstate water, subject to abatement under the Federal Water Pollution Control Act, is occurring in the Potomac River, Washington Metropolitan Area. Untreated and inadequately treated sewage from Alexandria, Virginia, Arlington County, Virginia, and the District of Columbia, and Fairfax County, Virginia is finding its way into the waters of the Potomac River, an interstate stream as defined by the Federal Act. Such discharges cause pollution of the Potomac River so as to enganger the health and welfare of persons in the District of Columbia, Maryland

and Virginia, States other than that in which the discharge originated. For the purpose of the Federal Act, the District of Columbia is deemed to be a State.

2. Until the Potomac River reaches the Washington metropolitan area it is a relatively clean stream. This was the conclusion of the first session. Pollution caused by discharges from Alexandria, Virginia, Arlington County, Virginia, the District of Columbia, and Fairfax County, Virginia, contribute significantly to:

a) Increased concentrations of coliform organisms associated with human diseases which constitute a health hazard to recreational and commercial users of the River;

b) Deterioration of the water quality to the extent that severe sight and odor nuisances have been created (due to floating solids and sludge deposits) resulting in serious impairment of the River as a residential, sight-seeing and recreational area;

c) Impairment of water quality so as to render the River unsuitable for game fish habitation.

At the first conference the conferees agreed to the District of Columbia's immediate plans for improving the Blue Plains sewage treatment plant are satisfactory and the time schedule for its accomplishment by 1958 is reasonable.

4. The conferees agreed to adjourn the conference subject to reconvening at the call of the Chairman, and the

second conference was to be held not later than three months after publication of the report on the pollution of the Potomac River, which was then being prepared under the sponsorship of the Interstate Commission on the Potomac River Basin. That has been done.

5. The conferees at the first conference also agreed that the second session of the conference include the conclusions of this report on the Potomac River which was being prepared; that it include discussions on the establishment of a time schedule for completing financial arrangements, plans and specifications and letting of construction contracts for facilities to further improve the District of Columbia's plant beyond the work contemplated to be completed by 1958; the establishment of a time schedule for completing financial arrangements, plans and specifications, and letting of construction contracts for remedial measures to control sources of pollution emanating from the District of Columbia caused by storm water overflows which are not presently processed by the Blue Plains plant.

As a basis, the report presented at the first session of the conference by the District of Columbia representatives outlining three alternatives for coping with this problem will be analyzed by the conferees; This has been done.

And the establishment of a time schedule for completing financial arrangements, plans and specifications, and letting of construction contracts for remedial work to be done by Alexandria, Virginia, Arlington County, Virginia, and Fairfax County, Virginia.

Now, at this time, I should like to briefly introduce the conferees.

Starting at my right, for Virginia, we have Mr. Long, Dr. Davis, Mr. Paessler and Mr. Walker; for the District of Columbia, we have Mr. Auld and Mr. Cary; for Maryland, Mr. McKee and Mr. Brown; for the Interstate Commission on the Potomac River Basin we have Mr. Tisdale; for the Public Health Service, Mr. Atkins and Mr. Gebhad; and my name is Murray Stein.

Now we will have a summary of a report on Potomac River pollution, entitled: "A Clean Potomac River in the Washington Metropolitan Area." This report was prepared under the sponsorship of the Interstate Commission on the Potomac River Basin, and for the summary of this report, we should like to call on Mr. Tisdale.

MR. TISDALE: Thank you, Mr. Chairman.

Before commenting on this summary, might I introduce Mr. Fisher, one of our Commissioners who is just coming up here because he may want to comment upon this matter, and one of our other Commissioners, Mr. Ray Long, of Virginia, who is here and who may wish to comment on the remarks that I make.

I was authorized at the Richmond meeting of our Commission, a few weeks ago, to present, briefly, this summary, and I shall do it very briefly, and then I shall call upon Mr. Wolman's associate, John Geyer of Baltimore, who is here, to amplify my remarks in that respect, and later on, I should like to call, when the appropriate time comes, upon Mrs. Rosenbloom of the Citizens' Council for a Clean Potomac, who I think is in the audience.

Mr. Chairman, very briefly, I might say that Abel Wolman and Associates of Baltimore, Maryland, were engaged by the Interstate Commission on the Potomac River Basin in November, 1956, to prepare a comprehensive plan to year 2000, for pollution control in the Washington metropolitan area. In this report, delivered early on October, 1957, and printed by the Interstate Commission on the Potomac River Basin, was crystallized the judgment of eminent sanitary engineers with a lifetime of experience in dealing with the water resources of the Potomac Basin.

The Interstate Commission has not officially acted upon this report. It will probably be necessary to call a special meeting of the Commission to deal with it.

I shall try to point out, in this very brief summary, the highlights of the report, and in particular, first, I should like to mention silt polution.

This is perhaps the most outstanding recommendation the report makes, namely, the need for silt control, both by proper land use over the Basin, as exemplified by the soil conservation and forestry activities, local, state and federal, and by a large storage reservoir above Washington.

At the present rate of silt deposition in the river at Washington, D.C., the river will be practically filled up in another thirty years. Reference is made to the present Potomac Basin study by the Corps of Engineers, and a storage dam above Washington for multiple-purpose use, for metropolitan water supply, for pollution control, for flood control, and recreation and silt deposition.

Dr. Wolman emphasized the point that the Recreation Basin Project is dependent upon a storage reservoir and without it, it would be useless to proceed with the development of the Recreation Basin. The magnitude of the silt problem is set forth. Sixty million cubic feet of silt are deposited in this fifteen mile stretch of the Potomac River at Washington each year. The mountains and rolling Piedmont land, 12,000 miles upstream, are being washed downstream and deposited at the head of this tidal estuary at Washington. Two approaches are possible to slow down this blanket of silt now nine to twelve feet deep in places, steadily filling up the Potomac River. Improved land practices, and soil conservation work should be encouraged and speeded up, but, at best, this will only do about fifty percent of the job.

Now, with reference to sewage disposal matters which are presently particularly of consequence for discussion here, the report points out that all five jurisdictions in the Washington metropolitan area -- that is, Washington, D.C., the Maryland suburban counties, Montgomery County, Prince Georges County, Alexandria, Virginia, Arlington County and Fairfax County, Virginia, are all spending large sums of money for sewage collection and treatment, approximately $58 million in the decade 1950 to 1960. However, the population is still expanding rapidly. An estimate of the population for the Washington metropolitan area in the year 2000 is four million. Eighty percent sewage purification is recommended at the treatment works. A thirty mile conduit is recommended to take the sewage effluent from Blue Plains to Chesapeake Bay.

Handling combined sewage will be costly. It is not recommended that $300 million be spent to provide complete separation of combined and separate systems in D.C., but Plan No. 3, as it is called, is recommended as recommended by the D.C. Engineering Board at a price of $133 million. It is considered to give sufficient separation.

The upstream tributary areas in Virginia and Maryland in upper Fairfax County and Loudon County in Virginia, and Montgomery County in Maryland, above the intakes of the public water supply, can best be handled by a trunk line down the

Maryland side of the River.

It is important to make a decision on these interceptors as promptly as possible, because the metropolitan water supply, which will serve and is serving both Maryland, Virginia and the District of Columbia, on the future, must be protected at its source.

In Dr. Wolman's judgment, excellent progress is being made through cooperation of the several jurisdictions in Virginia, Maryland and the District of Columbia in the Washington metropolitan region. He feels and states in this report that no overall metropolitan authority is necessary since the Interstate Commission, if it were strengthened and its compactexpanded somewhat, could serve as an adequate coordinating agency.

And finally in his report his states that the "comprehensive metropolitan-wide plan herein described, if adopted, provides the basis for both the establishment of future needs of the various political jurisdictions, and the time schedule for construction to meet those needs. The Interstate Commission on the Potomac River Basin appears to be the logical agency for the continuing coordination of this program and for the militant pressure toward its prompt implementation."

With that very brief summary of some of the highpoints of the Wolman report, I would like to ask if John Geyer would pick up from there and develop the matter further.

MR. GEYER: I have not been advised of the length that this statement should be.

THE CHAIRMAN: Ten or fifteen minutes. Here is a pointer that you can use for the map.

MR. GEYER: Gentlemen, this report, because of the limited time and personnel that were available to prepare it, has been developed on a pretty broad and general basis. There remains, of course, an enormous amount of research study and engineering to convert some of the things that have been suggested in this report into engineering realities.

This being the case, I prepared, before coming over here, just a very brief pencil outline, which was entitled "Work to be Done and Where to Start."

I am going to proceed on the assumption that most of you are quite familiar, or at least have seen the report, and so I am going through it and will pick out points that appear to need attention. Of course, there has already been a great deal of work recommended in other very fine engineering reports on the sewage and sewage pollution problem in the Washington metropolitan area. Certainly much of the work which was recommended in the Board of Engineers' Report, Plan 3, which told of an estimated cost of $133 million, will need to be performed. We did not try to make any judgment as to which of that is more important than some of the other

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parts, but, in any event, over the course of the years, it is going to be necessary to expend most of this money for the reason that a relatively small amount of it has been budgeted to separation of the old combined system. The majority of this work is constructing interceptors, outfalls, major relief sewers and pumping stations necessary to correct some of the existing pollution, but more important, to prevent an actual increase in the pollution of the river in Washington, due primarily to storm water overflows, so that this work is not something that can be looked upon as desirable to reduce pollution, but it pretty near has to be looked upon as having to be done to prevent increased pollution.

Timely studies have not been made for the adjoining areas, although Fairfax County and the Washington suburban sanitary districts are doing an enormous amount of work in meeting immediate demands and trying to plan for the future sewage needs of these areas.

It would be nice if in the near future this work which is now underway could be converted into a long range program, and supported by the type of report that has recently been furnished by the District of Columbia, Board of Engineers.

Of course, the Wolman Report recognizes the importance of continuing with all the present abatement works and plans which have been conceived over the years, on the basis of a great deal of study of this problem, and in addition to continuing to build the already planned treatment works, a great deal of money must be spent in keeping up with the local sewage problems, because this area is growing tremendously, and large sums of money will be required just to build lateral sewers and provide the house connections, and as the areas become more densely settled, to build sewers in areas now served by septic tanks where these are working inefficiently or are inadequate.

Turning then to the report itself and what it recommends, I have listed here nine items that seem to me to be in the order of attack that is desirable.

The first one is to study the actual silt accumulation in the Potomac River estuary. Based on the very sketchiest kind of information, we came up with the figure of 60 million cubic feet per year. That is already being questioned, and I think with considerable validity. I believe the questions that have been raised so far have to do with the idea that it is an overestimation, and it may well be, but it may be an underestimation. Certainly this figure is surrounded by a great deal of uncertainty.

It would be desirable therefore for an appropriate agency to make a detailed study of the history of siltation in the Potomac River, and find out insofar as possible from the record itself what has actually happened. We know, of course, that there are many areas that have been filled with silt taken from the river. Therehave been very, very large quantities of gravel dredged out of the river and used for building material, if the space excavated is available for silt deposition,of course.

This problem is becoming acute at this time because of the fact that there are no longer convenient places to put the silt dredged from the river. The Potomac parks have been essentially completed. Nobody would want to raise the Potomac park ten feet. The same is true of the park areas along the Anacostia River. They have been filled and made into playgrounds and golf courses, and the like, and there is no proposal to build large airports in the water area of the Potomac anymore. Up the Anacostia, perhaps, there will be considerable area for silt deposition, but the Anacostia is a terrific silt-bearing stream and what space is available will likely be needed to take care of the material coming down the Anacostia.

In addition to studying the amount of silt, and the making of better estimates of the magnitude of the problem, of course, it is essential to try in every way possible to reduce the erosion and siltation in the Potomac Basin.

The second item I have listed here is a model study of the river. That is mentioned only briefly on Page 46 of this report, but the importance of this problem is such that it would be highly desirable to construct a hydraulic model to find out more about how the river behaves and more about how changes in channels or construction of barriers or construction of dilution and oxidation ponds might affect yhe circulation and the behavior of this stream. The Corps of Engineers have made such models for a number of estuaries in the river. One of the early ones was of New York Harbor which was concerned with the currents in Hell Gate. Recently they constructed and studied, in very great detail, an elaborate model of the Delaware River. Some years ago, the St. John's River was modelled cut at Vicksburg in order to study not only the affect on navigation works by making changes in the river, but also the effect on pollution of the river on doing certain things. Such a model study could serve a great many purposes. With regard to the Recreation Basin, it could include designing of the oxidation and dilution areas that have been suggested for study, study of the flushing behavior of the estuary, study of the possibility of controlling the circulation pattern by jettison, and the like. Such a model could be built in Washington, actually, and there might be some good reasons for doing that, in that it would afford the people who are here most interested in it an opportunity to see this thing in operation, but if it were to be built here, serious consideration might be given to making it not only a hydraulic model but an architectural model as well, so that the folks who watched it would know what was going on and what the surroundings would be.

The third item that I have concurrent with the model study should go on the engineering studies of the Recreation basin and its attendant works which will have to be designed on the basis of economic and hydraulic factors both, so the two studies, the hydraulic and the economic aspects of the project would proceed simultaneously.

The fourth item is to initiate investigation which would make it possible to predict the biological behavior of the water when greater quantities of fertilizing minerals are added. It seemed to us that with present knowledge it is impossible to predict what will happen in this river as the amount of phospherous and nitrogen in mineral form increases. Not only will the fertilizing minerals be increased by the increasing amounts of more highly treated sewage, but as supplemental irrigation is used more extensively, it then becomes economical to use mineral fertilizer more heavily. With more and more fertilizer in more and more water, when the fertilizer is carried into the streams, this presents a pollution problem of a sort in that it encourages algee growth, which may develop differences in the problem.

I don't have any idea as to how this study may be made, but certainly there must be some way of getting at this problem and finding out what may happen.

The fifth item is investigating the effect of the use of garbage grinders in pollution loads going into the river. There have been some very cursory types of studies of this problem, but none have been good enough to serve as a base for a prediction of the increased pollution load on a stream due to increased use of garbage grinders. This means going out into the communities where they all use garbage grinders in the homes and in the apartments, and studying the quality of the sewage from these areas, and making predictions what the trend will be in the use of these devices. This garbage grinder business is a serious one, because it is shifting from incineration to stream pollution, the whole problem of getting rid of garbage or kitchen waste.

The sixth item is the study of the behavior and possible value of the suggested oxidation and dilution areas. In this estuary there are opportunities to take advantage of some of the unused water areas in a controlled manner to excelerate the final oxidation of the treated sewage. These are not oxidation ponds in the usual sense of the word. They go out and build those in great big areas, but in this treatment map right here (indicating) this is Oxon Bay and that is too shallow now to be used for sailing or anything of that sort. It is a few feet deep in most areas. It would be relatively simple to throw a dike along this area (indicating) or areas down here, or areas at the mouth of Hunting Creek, and fix it so that it filled at the upper end and after that at the lower end through the tide gates, exactly the way the tidal basin does now. This might possibly provide a means of getting some additional oxidation sedimentation stabilization before the sewage effluent actually leaves the mainstem of the river. It would be possible to dike this portion, and put treated effluent into it and see what happens. Of course here again there is the problem of the biological behavior of such oxidation and dilution areas that will have to be studied.

Item No. 7 is begin accumulation of scientific information regarding the discharge of treated sewage into Chesapeake Bay, and start a move toward the resolution of any controversies that may arise. Because of the uncertainties with regard to the biological behavior of the estuary and also because it is recognized that even though we predicted the population of something like four million eight hundred thousand in the year 2000, that is not necessarily the top population of this metropolitan area. The Corps of Engineers are using for the year 2,100 a population of something like ten million people. Well, an end is coming to the amount of sewage effluent that can be put in the estuary. Whether it is for two million or four million or ten million is perhaps subject to debate, but the problem is going to get more severe as the population gets larger and larger, so because of the uncertainty and in view of the fact that this may be a very large metropolitan area some day, it has been recommended that a line be built to take the sewage from Blue Plains just a little south of east to the Chesapeake Bay, which is on this scale could be over quite a ways, and discharge it off-shore a mile or so. And perhaps the sewage from the Arlington County plant can be brought over, and some day, if also desirable, the sewage from the mouth of Hunting Creek may be brought over and sent across to the Bay.

All efforts to dispose of wastes in Chesapeake Bay raise doubts in the minds of people who use the Bay for recreaction and as a source of their livelihood through harvesting seafood. The report talks about treated effluent and it is our opinion that this treated effluent will actually be beneficila to the Bay. The amounts of water there are simply enormous compared to the amount available from the Potomac estuary. The line also affords some opportunity for using the sewage plant effluent for supplemental irrigation in the southern Maryland counties, and it would be an ideal liquid for that problem. It also offers opportunities for industrial use, either along the line, or perhaps over on the Bay. So that there may be a great many advantages to building this line to the Chesapeake Bay other than relieving the load on the Potomac estuary.

The ninth item is to begin the engineering studies of alternate schemes for transporting the effluents to the Bay. This is going to be a very expensive project, of course, and all kinds of different engineering solutions to it will have to be worked out and compared to find that which is most economical;and finally, the last item that I have here is: it would be desirable to continue, perhaps more actively than at present, the study of the effect of waste disposal from boats upon the quality of the river.

The difficulty or danger from disposing of sewage from boats is that it is always very fresh and the short circuit can be rapid. This is a problem in all harbors and if it could be solved here, it may be a blessing to other areas in the country where they have the same problem, and they could take advantage of what is learned in the study in connection with this problem in the Washington area.

That is all I have.

THE CHAIRMAN: Thank you Professor Geyer.

I think what we have gotten is a better perspective of the problems we are facing in this metropolitan area.

What we are going to do here from now on in this conference, of course, will just be the dealing with a small part of that. We need perspective to realize that the job just won't be done unless we exercise vigilance in moving forward to do it.

I would suggest this, if I can, to the conferees, that we have all had an opportunity to review and analyze the very excellent report that Professor Wolman and Professor Geyer and associates have worked on. I would suggest that we agree to keep that in mind as we are developing our proposals here, so that any proposals we may make would not be inconsistent with the purposes or possibly the recommendations of that report. If that is agreeable to all concerned, I think we can again call on Mr. Tisdale.

MR. TISDALE: You will recall that in Charlottesville the request was made that this report be made available and sent to all the conferees. That was done, but I don't think I officially filed the report with this conference, and I should like to do so at this time.

THE CHAIRMAN: Thank you.

MR. TISDALE: I should like also, in view of the fact that one of the Commissioners will probably not be able to be here in the afternoon, Mr. Ray Long, who has been on our Commission for over fifteen years, ever since its work started, and now heads the Department of Conservation in Virginia, I should like to take the privilege of calling on Mr. Long at this time, if I may.

MR. LONG: Mr. Chairman, I certainly have not had an opportunity to become sufficiently familiar with the reports of this particular program to make any concrete, constructive comments for this conference. The Virginia provision for participation on the compact on the Potomac River Basin is somewhat different from that of the other signatory bodies. Under Virginia law there are three members on the Interstate Commission on the Potomac River Basin. Those three members first comprise what is known as the Virginia Commission on the Potomac River Basin, and by virtue of their appointment by the Governor to that Virginia Commission on the Potomac River Basin, they are automatically members of the Interstate Commission on the Potomac River Basin.

Let me say that you are all aware of the fact that under the charter of the Interstate Commission there is little by way of authority. Our responsibility is largely and solely one of informational and educational efforts to promote interest and concern in cleaning up the Potomac. There is no authority vested in the Interstate Commission by way of police activities or any authority to enforce pollution abatement procedures.

As far as the Virginia Commission on the Potomac River Basin is concerned, it is our firm thinking and that firm thinking is required by Virginia law, that any action, as far as Virginia is concerned in pollution abatement must come from and flow through the duly constituted authority in Virginia, the Virginia State Water Control Board.

The Control Board is represented here today, and will, I hope, explain by its own representatives, what is being done, what has been done, and what is contemplated, but any action from Virginia in cleaning up pollution in the Potomac, as far as State action is concerned, must flow through and come from the legally constituted authority, which is the Water Control Board.

May I express my pleasure in having the opportunity to be present at this conference, and the hope that all of it will come to very concrete, constructive and helpful suggestions for looking toward a realization of what we all want and hope for, and that is a clean Potomac in the metropolitan area.

Thank you.

THE CHAIRMAN: Thank you, Mr. Long.

Mr. Tisdale, do you want to go forward with the third item on the agenda "Water Quality Objectives - Interstate Commission on the Potomac River Basin?"

MR. TISDALE: I will be glad to present the developments in that field.

At the request of the Washington Metropolitan Regional Conference, Colonel A.C. Welling, Chairman of the Water Supply and Pollution Abatement Committee, during November, 1957, the matter of setting up water quality criteria for the Potomac in the Washington area was undertaken by the Interstate Commission on the Potomac River Basin.

Mr. Louis Warrick, who is here today, and is the Chairman of the Water Committee of the Commission, called his

Committee into session in the offices of the Commission on January 9, 1958. There were fifteen persons present, including not only the Water Committee members, but representatives from the Health Departments of Maryland, Virginia and the District of Columbia.

The reason for that program was to review the water quality criteria which had been proposed and was printed in the 1954 report of the Commission entitled "A Report on Water Pollution in the Washington Metropolitan Area."

The Committee, at the close of work that day, agreed upon a report, and that was submitted to the Commission at their Richmond meeting in Virginia on January 22, 1958. It was approved as a basis for negotiation, and the Commission authorized the Director to send a copy to Colonel Welling and to the state agencies for consideration and comment.

I should like to file a copy of that proposed report here this morning, because the Wolman report has had a lot to do with reference to criteria for water quality in the River, and it is certainly desirable that the Commission work out these water quality criteria.

I should like to comment just briefly for the record on the persons that were present on Louis Warrick's Committee. There were fifteen. I think you will see that they are persons who have worked in Maryland and Virginia and the District of Columbia for many, many years.

Giesboro Point. And here, for the first time on these charts, the trend line -- and I think that this is really the important thing on these charts -- the trend line begins to show a slight increase over the years, and there is no evidence that that increase is being reversed.

The next point is a point immediately above, possibly a quarter of a mile, above the District of Columbia Blue Plains Treatment Plant outfall. And here again we note the very definite increase in bacterial pollution over the years. There the pollution is about at its maximum from a bacterial standpoint, with values -- I believe there is one maximum here as high as 13,000 per ml., 1 ml. of water being about a hundred drops.

The next station is immediately below the District of Columbia Blue Plains Plant and the results here vary somewhat from those at the station immediately above the sewer outfall from the plant; the same general trend and the levels of bacterial pollution are very much the same as the station immediately above. This, as I said before, is because of the tidal action which carries the sewage upstream as well as downstream from the Blue Plains Plant. In fact, the tidal action is so marked that the Potomac at Washington is almost more like a lagoon or a lake during periods of low flow from upstream than it is like a normal stream flowing down with the slope of the stream bed.

This means, of course, that a great deal of the pollution from the area is more or less held along the waterfront of the area until it is reduced by natural purification.

The next station is Fort Foote, which is about this location (indicating on chart). This is the first station below the District of Columbia line, and is a matter of some three or four miles below the Blue Plains Plant. Here the bacterial pollution has improved to a certain extent. This line is about the same position on the chart as the other but the scale here has been reduced so that the actual results here are quite a bit lower than they are at the station immediately below the Blue Plains Plant. Here again, we still have the increase in trend of bacterial pollution.

Now a chart on the monthly average coliform organisms. This is for Fort Washington, which is at this point about eight miles below the District of Columbia. Here there has been still further reduction in the coliform organisms, but still we have the trend of increasing bacteria.

Now, the District is presently maintaining two additional stations farther downstream, but I did not incorporate results from those in these charts because the period of record for those two new stations, the results are limited, and I didn't think it would give comparable trend. The period of the record was not long enough to give a realistic trend of bacterial pollution.

The final bacterial chart presents the more recent quality of the water from the bacterial standpoint, starting at Three Sisters Island, passing the District of Columbia Blue Plains Plant outfall and continuing downstream to Hallowing Point in this case.

These data represent three years of observations from 1954 through 1956, or the summer periods of those three years.

The chart shows the average for all three years, for all summer values for all three years, at each station; and also shows the maximum single monthly average during that three-year period, the heavy closed circles showing this. This curve presents a picture of extreme bacterial pollution, particularly from a point about midway between Roosevelt Island and Giesboro Point, and from there on down to Fort Washington.

In this area anyone exposing himself even to casual contact with the water through such activities as boating -- getting spray from the bow of the boat; such activities as fishing; even wading in the stream; does expose himself to a rather definite health hazard in that area.

On either side of that particular section, upstream from there at Roosevelt Island and Three Sisters Island, and from Fort Washington on down to Hallowing Point, the bacterial quality here is somewhat better, but in the lower section it still is not acceptable to such uses as swimming, which would involve more intimate contact with the water.

You might note that in all cases in all sections the actual observations show values well in excess of any State Commission objectives for the river.

The other set of data that we selected in addition to the coliform organisms, as being most representative of the effects of sewage on water quality in the area, is dissolved oxygen. Generally, seven to eight p. p. m. of dissolved oxygen indicates the stream is healthy and it can absorb a certain amount of waste without damage, and generally is in pretty good condition. I mention that merely to establish a base line for comparison of the results found in the Potomac River through the analyses by the Blue Plains Plant.

The first chart on dissolved oxygen is at Three Sisters Island and it indicates a good quality of water. The values, generally, are in the vicinity of 7 p. p. m.

I might tell you how these averages are obtained, however. They are the averages generally of four consecutive samples for each year we went through the data and shows the four consecutive results which when averaged gave the minimum values, minimum average for that year. Those results are shown a solid line connecting open circles. In addition, we have plotted the minimum single value of the four values that went into the 28-day average. And those are shown by closed circles connected by a dashed line.

In general, the quality of water at Three Sisters Island from a dissolved oxygen standpoint is good, and there is no definite evidence there -- there may be some slight evidence -- but it is very slight, of any reduction in dissolved oxygen at Three Sisters Island over the years.

The next point is Roosevelt Island, and here again, the quality of water is indicated by dissolved oxygen as relatively good, again averaging around 7 p. p. m. over the years. And no -- maybe a slight again, but no definite evidence of a trend of reduced dissolved oxygen over the years.

When we come to Giesboro Point, however, the picture is different. As you recall, with respect to coliform organisms, I said this is the point at which the results of the effects of sewage from the area start to show up. And here, in recent years particularly, some very low dissolved oxygen values have been obtained. The averages in recent years run possibly around 2 p. p. m., and with a very definite significant trend of reduction in dissolved oxygen since 1938.

The fourth point is just above, again just above the Washington sewers, and here we have a very similar picture of that at Giesboro Point, but with results slightly lower and with the trend at little more definite, a little steeper, with many minimum values getting down to less than 1 p. p. m., which is approaching a very critical condition.

The station immediately below the sewer presents pretty much the same picture.

Going on down to Fort Foote, there is some improvement. Still the trend of reducing dissolved oxygen over the years and still some very low minimum vales of less than 1 p. p. m.

At Fort Foote, which is as far downstream as we carried the oxygen analysis, the water is in reasonably acceptable condition from the standpoint of dissolved oxygen. It is not all that possibly might be desired, because we have some minimum values that are fairly low down there of 2 p. p. m., but in general the water has improved quite a bit there, but there still is the downward trend in dissolved oxygen concentrations.

The final chart is somewhat to the last chart on coliform organisms, which shows an average condition, dissolved oxygen condition of the river for the past three years. Here again, we took the three minimum 28-day values and averaged them to obtain the open circles which represent the average conditions for the last three summer periods.

In addition, we have plotted the single minimum value, those closed circles, in the three-year period at each station.

We have shown again the Interstate Commission objective for dissolved oxygen for the river by the straight heavy line across the chart.

And, the data on dissolved oxygen pretty well support those of the coliform organisms with respect to the zone of heaviest pollution, here again, from about midpoint between Roosevelt Island and Giesboro Point, and from that point on down to Fort Washington dissolved oxygen is quite low; the three-year average dropping at its worst point down around 2 p. p. m. which will support only the roughest sort of fish, and can't support game fish at all; that is, for any extended period of time. And many minimum values in the range of a very few tenths of p.p.m. which indicates that the river is approaching an extremely critical condition and that any prolonged dry spell or any continuation in the increase of waste load going to the river will result in a very critical condition of pollution where odors will be given off, which will be far greater than odors that have been encountered from local raw sewage discharges and which will kill all fish in that section of the river.

The river at Roosevelt Island and above it, as I have pointed out on the individual station charts, is in pretty good shape and does exceed the objective of the Interstate Commission.

The river downstream has recovered to some extent, but still is not in a very satisfactory condition from the standpoint of B.O.D., even as far downstream as Hallowing Point, with some minimum values coming down to at least to 3 p.p.m.

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These charts are based on hard, cold facts and do present a rather bad picture so far as pollution in this area is concerned. We do not have comparable data on the effects of raw sewage overflow. Of course, those effects are reflected to some extent in the charts we have just presented, but it is not readily feasible to separate those results in these charts from those of the treated sewage discharges.

We do, however, have the evidence of a great many reliable observations and reports on the effects of the raw sewage discharges and the areas that have been affected by these discharges from the standpoint of objectionable floating solids and from the standpoint of sludge deposits, gas bubbles rising from those sludge deposits, and odor have been most obvious and most objectionable along the Washington waterfront from Rock Creek down to at least the Lincoln Memorial, in the Washington channel, pretty much throughout the entire channel.

And in these two areas these conditions result from overflows of raw sewage from the District. In the Anacostia River, particularly at Blaine Street there is still -- although most of the Washington Suburban Sanitary District sewage now goes to the Blue Plains Plant there is still an overflow of raw sewage from one of the Suburban District interceptors in the vicinity of Blaine Street, which gives rise to similar conditions in the Anacostia River near that point.

In the vicinity of the Alexandria waterfront, similar conditions are certain to exist because of the combined sewer overflows along the waterfront at Alexandria.

This may not be a part of our immediate problem, but

I think I should mention, to complete the picture, that in the past certainly, Hunting Creek below Alexandria and Fairfax, and Four Mile Run below Arlington, have exhibited similar characteristics of excessive odor, floating materials, and sludge deposits due to the discharge of raw sewage. Now, those conditions have been improved to a considerable extent by the installation of treatment. But, during our visit there in April in connection with the preparation of the report, we did observe some odor in Hunting Creek immediately below the Alexandria Sewage Treatment plant, and in Four Mile Run at its mouth, and in the river immediately below the mouth.

I say this, not because, as I say, this may have too much importance in our immediate problem which is interstate pollution of the river, but it does explain part of the reason for the very adverse public reaction to the condition of the Potomac River. And I do not feel that that adverse reaction will be overcome regardless of how much treatment is installed in the present locations -- present sewage treatment plant locations, until raw sewage discharge conditions are solved.

I don't think there is any question that both the data available and the observations reported can leave any doubt that the Potomac is a seriously polluted stream.

Much effort and money has been expended on sewage treatment in the Washington Metropolitan Area. Commendable progress has been and is being made. However, it is evident that pollution of the Potomac River in the Washington Metropolitan Area constitutes pollution of interstate waters subject to abatement under the Federal Water Pollution Control Act as such pollution endangers the health and welfare of persons in states other than those in which the discharges contributing to such pollution originates.

Thank you.

THE CHAIRMAN: As we announced previously, the various groups represented may ask questions or make comments on this report.

Does anyone from the District of Columbia have any questions or comments?

MR. FISHER: I am a little surprised, Mr. Chairman, at the reference to the Blaine Street overflow as having created conditions similar to those at the Water Gate. I think that's purely a quibble. But I don't think it has been in operation sufficiently long to meet those other standards.

MR. CHAIRMAN: Are there any other comments from the District?

May I ask a question on that? Is the Blaine Street interceptor under the jurisdiction of the District of Columbia?

MR. AULD: I would prefer to answer that at another time, Mr. Chairman. It would take fairly long.

THE CHAIRMAN: All right. Thank you. Do you have any comment or question, Mr. Cary, on this?

MR. CARY: Nothing further at this time.

THE CHAIRMAN: Do the Maryland representatives have any question or comment at this time on Mr. Kittrell's or Mr. Atkins' statement?

MR. BROWN: I would like to ask a question of Mr. Kittrell with regard to the first chart shown, regarding removal of sewage by treatment. I wanted to ask for an explanation of the meaning of "removed by treatment". Is that in terms of BOD removal?

MR. KITTRELL: That's BOD, yes.

MR. BROWN: Does that represent rated capacity or an evaluation of operation of facilities, as well?

MR. KITTRELL: The first portion of the chart, all except the last two points in 1957, are based on sewered population, which are usually estimates of how many persons are connected to the sewers; and the lower line, representing treated sewage discharge, or treated plus raw when there was still some untreated sewage going in, based generally on more or less standard estimates of sewage BOD removal by the method of sewage treatment involved. In other words, say 85% for complete treatment and 35% for primary only.

But the last year, 1957, the two points are based on operating results for all of the sewage treatment plants involved. Actually, it took about the three most recent months of record, most of which were daily values, and obtained average flows and average BOD concentrations in both the raw and the treated sewage, and converted these to population equivalents, until the last two points are based on about three months' operating record at all of the plants involved.

MR. BROWN: And would represent, therefore, actual performance?

MR. KITTRELL: That's correct.

MR. BROWN: I would say, Mr. Chairman, that we have no further questions and we would accept the statement as presented by Mr. Atkins and by Mr. Kittrell as representative of the situation and effects as we understand them.

THE CHAIRMAN: Thank you very much, Mr. Brown. The Potomac Commission representatives -- Mr. Iisdale?

MR. TISDALE: No, I have nothing to say at this time.

MR. CHAIRMAN: Thank you. I think at this time we may --

MR. ATKINS: Mr. Chairman, could I ask Mr. Kittrell a question? In reference to water supply, as I recall it, you mentioned that since the District of Columbia took its water from Great Falls, that the stretch of the river below was of no concern. I would like to raise the question about Little Falls intake, that that is scheduled as emergency intake, and if you didn't intend to mention Little Falls rather than Great Falls?

MR. KITTRELL: No, I was thinking of Great Falls. I was considering the existing program rather than the future problem. However, we did not examine the bacterial quality specifically at Little Falls with respect to suitability for public water supply. This was something we did not cover in our investigation. This may have been something that should have been covered, but we didn't cover that.

MR. CHAIRMAN: May I just, for the sake of the record, and this is in your report which I don't think possibly was covered in the summary. Would you refer to the last large study in the Interstate Commission and say that the river approaching the District of Columbia is a reasonably clean river? Would you say that that is a true statement?

MR. KITTRELL: That is right.

MR. CHAIRMAN: I think, and it has been suggested that we take a 5-minute break at this time, and that seems to be a very good notion, but I would like to have everyone try to get back on time so that we can push along and try to get this conference under way rather rapidly. So, we will come back at 5 minutes to 11:00.

MR. CHAIRMAN: I suggest we move on with the agenda, and the next topic is The Occurrence of Pollution of Interstate Waters. As I indicated before, if in making their statements, any one of the conferees wishes to make a complete statement rather than just limiting themselves to Item II,he is privileged to do so.

I would like to call on the District of Columbia representative to make a statement at this point. Mr. Cary.

MR. WILLIAM H. CARY, JR.: District of Columbia Health Department.

Mr. Chairman, I would like to say first that the District of Columbia has represented not only the Department of Public Health in Mr.Brink and myself, but the Department of Sanitary Engineering, the Director of Sanitary Engineering, Mr. David Auld, who will make the principal statement for the District. We also have invited representatives of the Corps of Engineers, of Capital Planning Commission, and the National Capital Parks, to be present. I hope these people will participate in the discussions before they are finished.

At the outset I would like to say that the pollution of the Potomac River in the Metropolitan Area fortunately hasn't done too many things to people as yet. We are at the head of a tidal estuary that, because of its brackish condition doesn't form the source of water supplies so that we are damaging people downstream from us, so far as their source of water supply is concerned.

The real loss to the people in the area is the loss of facilities, the loss of the use of parkways, the loss of use of recreation -- water recreation, and the dangers, of course, that are associated with those losses. There are a few hardy souls who still believe that swimming in certain areas is all right even though those of us who are acquainted with the pollution problems feel that it's highly dangerous. Fish caught in the area subsist mainly on the sewage solids. We don't believe that fishing should be encouraged. And the Department of Public Health has, on occasion, had to assert itself rather strenuously to prevent water sport exhibitions which we felt would be harmful to the participants.

So that our loss has been something that's taken away from us, rather than the actual detrimental action on people themselves.

As a part of my statement I would like to read from the Water Pollution Control Plan as it was submitted to the Public Health Service a year ago, because I think it states in fewer words than I can summarize the problem as we see it and the problems of the area, more than specifically those alone of the District of Columbia.

Mr. Kittrell in his discussion has already pointed out thatabout three-quarters of all of the pollution as represented by the sewered facilities in the area comes through the District of Columbia sewage system, serving both the District and nearby Maryland. There is approximately 160,000,000 gallons of partially treated sewage from the District of Columbia's sewage treatment plant that constitutes this pollutional load. The remainder of the waste discharges come from a number of other local sources. As a consequence of this the Potomac has become septic in many of its nearby tidal reaches.

Reading directly now from the Water Pollution Control

Plan: "An expanding population is pushing constantly to the north and west along the River. The present water supply for the District of Columbia and parts of nearby Virginia come from this very area. The stretch of river north and west of Washington must furnish the future water supply for the teeming millions who will be the future residents of our national capital area.

"At the present time waste disposal in this suburban area is largely on a haphazard basis, with no overall plan for future control. Unfortunately, there are no major political subdivisions for this area, which have the jurisdiction to deal with this situation.

"The drainage areas and the sources of pollution are within three principle political provinces, Maryland, Virginia, and the District of Columbia. The receiving stream, the Potomac River, is within two of these -- Maryland and the District of Columbia; and the most probable source of water supply within one -- Maryland.

"The local political subdivisions and the Federal interest complicate this situation still further. To obtain cooperation between all of the agencies involved and coordination of their activities is more of a problem in our opinion than the technical solution to the needs of this area."

The problem of industrial waste pollution, as Mr. Kittrell so aptly pointed out, is minor, within the Metropolitan area. The chief causes of pollution are domestic sewage and silt. The former represents no real problem as far as treatment is concerned as long as funds to construct the necessary works are available.

Siltation of the river not only involves our local sand and gravel operation, but includes the far greater problem of land management, both locally and in the Basin. Land use reforms to improve crop management and control of the exposure of raw land by construction works are badly needed.

The following three points probably sum up in a greatly simplified manner the major problems of water pollution as we see them in the Metropolitan area:

First, the need for a coordinated cooperative effort to plan the control of present and future pollution, such that the logical source of water supply for the area will be safeguarded. I believe that that is a major future problem in this area.

Two, the need for an extension and expansion of sewage collection and treatment facilities so as to reduce the present pollutional load in the river, and;

Third, the need for basic engineering and biochemical studies of the Potomac River and its tributaries to determine all the sources and the amounts of pollution and their effect upon the river.

So much from this Water Pollution Control Plan. I'd like to comment rather briefly on industrial surveys within the District, and if there are specific questions I think my associate Mr. Brink may be able to answer them; but the Department of Public Health has within the District of Columbia conducted an industry by industry survey along the waterfront for the purpose of determining possible sources of industrial pollution going directly to the river, and is taking steps towards their corrections.

Some corrections have been made, other corrections are now being studied and worked on, and we hope for some future improvements in those areas.

I'd like to point out another matter which we consider highly important in the Metropolitan area from the standpoint of pollution control; and that has to do with citizen's interest. We believe that in order to carry out a program of pollution control of the size that it must be carried out in the Metropolitan area, that the officials must have the support of an aroused and interested citizenry in order that monies will be appropriated.

No need to tell any of you that in the District of Columbia we are faced with political problems that are somewhat different than either the states of Maryland or Virginia face in getting to our political leaders. In fact, they aren't our leaders, they are your leaders. And our City Council consists of folks that are elected all across the country. So it takes an aroused citizenry in our area to make sure that the monies are appropriated. And to this I give great credit to the press and the radio and the television for the parts that they played in informing the public.

Now, as my last part in this program -- and as I said, Mr. Auld will play the larger role of going in to details in these matters. As my last contribution to this program, I'd like to put into the record the Laws and Regulations of the District of Columbia Pertaining to the Control of Stream Pollution, because I think that they might serve to provide some information to others, at least, what we can do and what

MR. CARY: Mr. Stein, ladies and gentlemen, the District of Columbia has been invited to participate in this conference today. Representatives of the Department of Public Health, the Department of Sanitary Engineering, the Washington District Corps of Engineers, the National Capital Parks, and the National Capital Planning Commission. I don't think that any of us, other than the Department of Sanitary Engineering will participate both in it for the sake of getting the program along, and also for the sake of the Department of Sanitary Engineering, too.

Mr. Auld, I am sure, will amply cover the part of this program that is to be presented at this time, and it is my pleasure to turn to microphone over to Mr. David Auld, the Director of the District of Columbia, Department of Sanitary Engineering.

MR. AULD: Thank you, Mr. Cary.

Mr. Chairman, Gentlemen: I have been somewhat at a loss, as I reflected what ought to be said at this time, because so much was said on these same subjects at Charlottesville last August, and there has been built up, which I would consider to be an adequate record of the program of the District of Columbia.

There were some editorial points which came to mind as I read it. I won't suggest them now in any tedious way, but before these become permanent records, I hope to have the opportunity to correct some rather obvious errors.

Under the circumstances it may be very well to review briefly what was said in Charlottesville. First, with respect to the District's proposal for expansion of its Blue Plains sewage treatment plant, it was pointed out then that we are spending some $11 million to $12 million for expansion of facilities both quantitatively and qualitatively, in treatment. The work is under contract in large part. Other contracts will be let during this calendar year, and we hope to be in operation by the end of the calendar year 1958, and at that time be capable of increasing removals which are now in the order of 26% and 28% to the level of 80% BOD.

We are not in our program stopping with these improvements, but have schedules in our six year construction program, which gores from 1958 to 1959 to 1964, further additions to the plant, which is now estimated to cost $5,144,000, and with those additions which will be completed by or before 1965, depending on loading, we would then have a plant capable of giving full secondary treatment to the 80 percent level to a population of 1,791,000 people resident in the District of Columbia and the Washington suburban sanitary district, by this tributary to the District's sewage system. By the strength of present estimates, that would provide for a population expected on the system by the year 1980.

Do I understand, Mr. Chairman, that the primary interest of this conference is in the present conditions of pollution, not those that might be anticipated ten or twenty years hence?

THE CHAIRMAN: That is substantially correct. What we are interested in is a plan which will correct the existing conditions of pollution, but will not be so meagre as to be obsolte in the near future. In other words, we will want a projection for several years hence.

MR. AULD: The completion of adequate treatment facilities in the District will, of course, not relieve the river of some raw sewage discharges. That is by reason of the combined system of sewers used in about fifty percent of the land area in the District of Columbia, and a general insufficiency in certain parts of that combined system at this time,because of age and load.

It is estimated that approximately two percent of the raw sewage generated in the District today does not reach the treatment plant through the operation of this system or these systems. We have addressed ourselves to this problem to see how something could be done about it. The long term solution was described at Charlottesville. I might mention at least a palative or short term solution, which is now in our program, if that would be appropriate.

THE CHAIRMAN: Yes.

MR. AULD: Realizing that a full cure, or an adequate cure must take large sums of money and much time, our first effort must be toward improving what we have, and we have in our budget for 1959 the beginning of a third siphon from our pumping station from the Anacostia River, crossing the river and directed toward our plant.

It is our expectation, with the increased capacity in that one link of our disposal system, that we will be able to lower the gradients in the critical parts of the system, which now contribute to certain dry weather discharges of sewage into the Potomac at Water Gate and the vicinity of 27th and G Streets, North West. These are, in our opinion the worst, objectionable occurrences of pollution, which could be treated after completion of Blue Plaines.

It is our belief that for a brief time the construction we propse will obviate dry weather flows, and perhaps reduce to a limited extent only the frequency of and duration of mixed overflows, but there will be benefit where I think benefit is most acutely needed.

Going beyond that, the District made a thorough study of its system and the problem of pollution from mixed overflows, a study by the Board of Engineers, which has made certain recommendations, and studied three plans in particular— that is, it brought for discussion the publication of three plans out of many others which were studied before the publication.

The first was a proposal to separate the sewage system into two catagories, storm water and sanitary, at a cost of $238 million. It was the judgment of our Board of Engineers, in which we concur, that the separation would be too costly for the benefits to be secured, that cost being not only in money, but in inconvenience, business loss, general community difficulty.

A second plan was considered, consisting primarly of large interceptors along the river bank from Blue Plains to the District line about Chain Bridge. That was estimated to cost $91 million. The interceptor system would have the capacity of ten times of the normal dry weather flow.

The third plan, with was heretofore described as "Plan 3" but it is "Plan C" at a cost of $71 million -- $71,433,000, or an engineering cost index of 700, which would provide five dilutions of the system of interceptors from Blue Plains to Rock Creek, from Rock Creek to Georgetown at a capacity of thirty dilutions, above Georgetwon an express system of domestic sewage only.

The effect of this plan and the other work which I just described would be to reduce the mixed overflows by at least 75 percent of the volume per year in the Potomac between Haines Point and Key Bridge. We believe with those reduced frequencies it would be possible, most of the time, to comply with the objectives described to us this morning as being suggested by the Interstate Commission on the Potomac River Basin. It is our belief also that through improvement of treatment facilities that we can succeed in meeting the suggested objectives in the lower part of the river, between Key Bridge and Fort Washington.

I might say that Plan C would in nowise preempt the adoption of the Wolman Plan which was described this morning. It should be noted, however, that Dr. Wolman's suggestion as to the territory outside the District should be accommodated by that system. His suggestion is to embrase larger areas than now contemplated in the report. I should like to point out that such accommodation would present no problems whatsoever in the design or operation of Plan C, and it could be revised to take in any territory almost of unlimited amount if it proved to be desirable from the standpoint of meeting community needs of the metropolitan community as a whole.

If you are interested in the construction schedule I have some thoughts on that. We have a six year program, and in that we have now scheduled expenditures of $13 million toward Plan C. That leaves us a substantial void in the future as to what we will do for the remainder of the financing. If we assume that we may expect revenues after

1964 at the close of our six year program period, of the same level as we would have between '59 and '64. We could eke out a completion of that plan -- the financing of it -- by the year 1975, with construction completed, let's say, in '76 or '77 Whne that time comes, I am certain that the internal sewage system of the District will not be adequate for that long period. In order to secure the relief which Plan C would provide, with money no object, it is our belief that the engineering and construction phases of that could be completed in a total of eight years from the present.

We would indeed welcome any suggestions as to how we might meet what we believe to be the essential time commitment -- rather than "commitment" let's say "schedule". there are no commitments.

I believe, Mr. Chairman, that is the point we want to make at this time.

THE CHAIRMAN: I think that is a very excellent statement. We can ask for comments or question on Mr. Auld's statement now.

Do any of the folks from Virginia wish to add to what Mr. Auld has said or comment or question?

MR. WALKER: I have no questions with respect to the presentation.

MR. AULD: I might say, that we are in the District most anxious for a thorough discussion and criticism of the proposals. We want your guidance in these things. We feel that we have been well advised. We feel that we are well satisfied ourselves from our understanding of the problem we face, and we believe this will provide a solution. We want, however, most of all, that it be acceptable and useful to everyone concerned.

THE CHAIRMAN: Thank you.

Does Maryland have a question? Do you, Mr. Brown?

MR. BROWN: No questions.

THE CHAIRMAN: Does the Commission have a question?

MR. TISDALE: No.

MR. ATKINS: Did I understand that you could complete from an engineering and construction standpoint Plan C in eight years?

MR. AULD: I think it is feasible. It is physically possible.

MR. ATKINS: Well in view of the attitude of Congress it certainly would seem to me that top consideration should be given to the completion of Plan C within that time, rather than continuing at the present schedule.

THE CHAIRMAN: How much, for the record, will it take to complete Plan C in the eight year period -- that is, by 1966?

MR. AULD: I am assuming the cost to be the same, whether it is eight years or eighteen, so the estimate given is $71,433,000. That should be adjusted somewhat upward because the cost since this estimate was made has risen. We never quite catch up on these, you realize.

THE CHAIRMAN: Ordinarily, Mr. Auld, we realize, when presented with a similar problem, I would say almost in any other municipality other than the District of Columbia the obvious solution would be a bond issue or to ask them to raise their own finance, but we recognize we have a relatively unique situation here, but I am thinking in terms of the conference, in terms of what the conference can establish as a reasonable schedule, or what we think would be a reasonable schedule, and ask the community to arrange for financing, without being rather too specific as to what such arrangements mean. We understand, of course, that in the ordinary situation that either means a general obligation bond or a revenue bond, or a combination of both, and I don't know, but I would like to ask, just to get this going, whether that would be possible -- whether a regulation such as that, for the District to arrange for financing, which we would come up with, would be meaningful.

MR. AULD: I am glad you brought it up. I should have brought it up myself.

What I have said as to our ability to finance inadequately, is built around special financial arrangements. In 1954, the Congress permitted the Commissioners to impose a sewer service charge in the District of Columbia, and it is from that, in large part, that we are able to proceed with our treatment plant's construction and the operation of our sewage system. That, however, does not yield but about $2 million a year -- $2¼ million for new construction. Of that at least a million must be held for use in the extension of service within the city, service for which people have paid, and the other obvious betterments of the system which are required in connection with highway work, street changes and other things. That also involves a $5 million loan which we must repay, the principal and interest. On top of that we are assuming that certain moneys from the general fund of the District of Columbia would be applied to that project -- in fact the bulk of it during this six year period and in order to provide general fund moneys, in quantities sufficient to make up a total of $13 million of expenditures in six years -- this is for Plan C -- it would be necessary for the Commissioners of the District of Columbia to borrow $100 million for general public work purposes, of which this is a part.

In the papers you might have seen this morning that the President has sent such a bill to Congress, or has cleared it for submission to the Congress, so what I have described is already built around special financial efforts on the part of the municipality.

THE CHAIRMAN: I realize that, but we all do realize that the efforts or the limitations presented in the District are rather modest, and understate the authorization given in other comparable communities for sewage treatment in the sense of an obligation to borrow money. Many of the cities, of course can authorize, and have authorized bond issues in the neighborhood of hundreds of millions of dollars for such financing. That type of financing does not seem to be available to the District of Columbia -- at least, it has not been for that type of work up to this time.

MR. AULD: Correct.

THE CHAIRMAN: Now we may grapple with that problem later for the sake of trying to get this solidified.

It is my understanding that construction, money no object, can be completed for Plan C by the end of the calendar year 1966.

MR. AULD: Yes.

THE CHAIRMAN: Thank you.

May I ask Virginia whether -- and I don't know if you have had an opportunity to examine this, but if you have whether you would think that the results to be accomplished by this would be satisfactory to you in Virginia, that is, in terms of the plans for improved treatment at Blue Plains which we probably can get into a little bit, and the plans for elimination of overflow.

MR. WALKER: Could I answer that in this way. We cannot speak for the communities of Virginia, because we are representatives of the State Board which has the problem of bringing the solution to the pollution problem. I can say that to our Board it is very gratifying to see that progress is being made. We have been working for many, many years, and we have always been faced with this problem where you can force us to do something when the District of Columbia is doing nothing. I think that will relieve us of much of that difficulty.

THE CHAIRMAN: Thank you, Mr. Walker.

I think while we are on the subject of the storm water overflows, I think it seems rather obvious that the shorter period of time would be most desirable for a target date, if the conferees could suggest that it might be appropriate for the District of Columbia to embark on a program to construct Plan C, substantially with such modifications as we may consider necessary as this develops, as we always do, with the notion that construction will be or should be completed by the end of the calendar year 1966, and that the District take appropriate steps to arrange for suitable financing for this construction.

MR. AULD: Do you want me to answer that.

THE CHAIRMAN: Yes, sir.

MR. AULD: I have the feeling that eight years is a physically possible undertaking. I don't know whether it has been demonstrated that eight years is exactly the time within which it should be done. I am inclined to feel that we should try to gain the benefit as quickly as possible. There are possibly other factors which may have some bearing on the setting of a final time schedule.

THE CHAIRMAN: Well, for a target date, the schedule could be set for an eight year period as a point to move forward from.

MR. AULD: I would be happy to have it as a beginning point for any later comment.

THE CHAIRMAN: Perhaps if that is agreeable to all the folks at the conference, we might be able to say this is the conclusion that we have reached, that there is a recommendation from the conferees for this eight year schedule and for the District to arrange for suitable financing by whatever means the District can find to be feasible.

MR. BROWN: Mr. Chairman, I think that the point might need a bit further consideration and examination as we go on with the review of these plans under Point 4 on the program. I think that, for example, considerations under Item F under Point 4 might have a rather distinct bearing upon what might be done in the overall construction of necessary work.

THE CHAIRMAN: I think that comment is very well taken, Mr.Brown, and we can at least agree about the engineering feasibility of that, and as a recommendation we think it would be desirable for this plan C to be completed within the eight year period or by the end of the calendar year 1966.

MR. BROWN: I wanted to ask Mr. Brown if he would outline for us what, if any, engineering limitations exist or might exist with regard to completing this construction. How fast would it be done, for example, if only engineering consideration were of concern?

MR. AULD: I don't foresee any engineering problems, Mr. Brown, which would prevent completion in eight years. Of course, it is very difficult always for the District of Columbia to secure clearances for the location of construction, and it comes to mind that we have with this plan the necessity of substantial work in the approaches to the Constitution Avenue Bridge. I believe that bridge, for example, has been under debate for five or six years. I don't know whether five or six years could be consumed before it is settled or not. At least that portion of our plan will be nebulous from a design standpoint; assuming everything goes right we can certainly accomplish the engineering in that time.

Since Plan C treats a number of elements of the system which I don't think we need discuss now, it may well be that some of those elements will be adequate for much more than eight years. The upper Potomac interceptor is now

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running just half full. Plan C contemplates its eventual relief.

As I sit here, I would not say that it would be necessary to go to the District line with that system in eight years if ten or fifteen might be adequate for that length. That is one reason I hesitated a little bit back when Mr. Stein made his point.

If the highway system, which has been under consideration in the Potomac valley, takes form, it may prove the most economical route is under the highway, in which case we will perhaps build it before there is a hydraulic requirement. There are many factors that bear on a thing of this magnitude.

THE CHAIRMAN: That is correct.

Did he answer you?

MR. BROWN: Yes.

THE CHAIRMAN: I would like to get back to the first point you brought up concerning the Blue Plains Plant. As I understand it, by the end of 1958, you will have secondary treatment of sewage resulting in an 80 percent BOD removal, is that correct?

MR. AULD: That is correct.

THE CHAIRMAN: As I understand it, by 1965, your present plans will provide for full secondary treatment, but that will again result in 80 percent BOD removal with a design capacity for 1,700,000 people.

MR. AULD: 1,791,000.

THE CHAIRMAN: All right, 1,791,000.

MR. AULD: Ninety thousand people are a lot of people.

THE CHAIRMAN: Then you say that is good until 1980 with present population prospects. How would you determine when the work completed by 1965 would need to be modified to be further improved to provide perhaps further treatment?

MR. AULD: I have no immediate answer on that, Mr. Stein. I assumed we were talking about short range determinations here today. I had not bothered going into it.

THE CHAIRMAN: You wouldn't at this point want to go further.

MR. AULD: I could give you a general answer. This plan is being designed so we can increase removal 100 percent should river conditions necessitate it. That is going from 80 to 90-plus in BOD removal, which means taking out twice as much.

THE CHAIRMAN: I realize that going up from 80 or 90 percent to 80-plus or 90-plus percent removal, means taking out twice as much and really raising the cost remarkably too for it. The point is, I think we have an obligation here.

1980 is not too far away to indicate that the type of treatment we may have to very well give by that time will be somewhere in the area of 90 percent removal.

MR. AULD: We have anticipated that as a certainty. We don't know when that time will come, but we are prepared to go into that level as it is needed.

THE CHAIRMAN: I have just one more question, and that is directed at the Public Health Service representatives; in the first conference we had a report of the Public Health Service indicating the percentage of the total load to the river put in by Virginia communities andthe communities from the District. Now, as I read those figures, 82.8 percent of the total load of the river at the present time is coming in from the D.C. plant. If conditions were to remain the same in Virginia, on that assumption, and the District, by the end of this year we will have 80 percent BOD removal. Would that change the loading of the District -- the percentage loading -- to the Potomac from the District and Virginia?

MR. ATKINS: Yes. The ratio, according to the figures we have on the BOD complications, Washington then would be contributing 60 percent and Virginia 40 percent.

THE CHAIRMAN: On BOD. How about coliform?

MR. ATKINS: Coliform presently is 75 percent for the District of Columbia, and 25 percent from Virginia.

If I may ask a question when I am being asked to answer one, can Mr. Auld clarify when he plans to place chlorination in operation. I didn't get that in your statement.

MR. AULD: I neglected to mention that we have in being a new chlorination plant as part of the treatment plant at Blue Plains, which is capable of treating flows up to I think 400 MPG. We have really got capacity. I expect we will start chlorination during the recreational seasons when our secondary process is in full operation.

MR. ATKINS: That would be complete chlorination

MR. AULD: Yes.

MR. ATKINS: To continue with your question, Mr. Chairman, now with chlorination in effect we would estimate that the District of Columbia as far as coliform in the stream, it would be in the area of 1 percent and Virginia in the area of 99 percent. Assuming that it stepped up treatment as Mr. Auld has described, and this stepped up treatment prevailed, and that Virginia continued as is, on that assumption those would be the figures.

THE CHAIRMAN: Now just for my thinking, and from the point of view of a date, when would chlorination go into effect?

MR. AULD: I expect we will start chlorination in this coming September.

THE CHAIRMAN: In this coming September?

MR. AULD: The most recent completion date on the new work plant is in September.

I have a question though, I suppose Mr. Atkins, in his percentage of coliform was thinking only of plant effluents and it should be pointed out that the District would contribute more than one percent because it would be contributing something certainly from the combined overflow.

MR. ATKINS: That is true. I appreciate your making that correction.

Certainly it is based on the plant effluents. The overflows are not considered in these figures.

MR. WALKER: May I ask a question, Mr. Chairman?

THE CHAIRMAN: Yes.

MR. WALKER: Concerning the statement that Virginia would be contributing 99 percent of the coliform, could I ask Mr. Merideth what capacity you take up on that. I would like to know.

MR. PAESSLER: I think it would be a good idea because frankly we are confused about these figures. All of the Virginia communities' sewage treatment plants do now chlorinate, and it seems that with the predominantly larger volume of District sewage, that those figures would be out and that the balance would be different. Virginia might well have a greater amount, but I don't believe it would be one percent against 99 percent from Virginia.

Could you indicate the considerations you gave to this to come to that conclusion?

MR. ATKINS: Mr. Chairman, I would like to have Mr. Kittrell come up and elaborate on those particular areas.

THE CHAIRMAN: Mr. Kittrell.

MR. KITTRELL: Getting into the area of calculating coliform percentages and percent reductions by plant, we have to make certain assumptions and there is a rather wide range of measurements that can be made in the way of coliform reductions by plants. I would like to say, however, that these figures are based on no chlorination by Virginia plants for the reason that when we visited these plants in April of last year, although they were employing chlorination, I was informed by the operators that I talked to that they were not employing chlorination for disinfection but for plant operating purposes, and so in these figures, which I am responsible for, I did not give any rate for production due to chlorination for operating procedures. Now certain assumptions can be made if the plants have gone to chlorination for disinfection since that time and the ratiowould tend more back to the present ratio if all communities are complying.

THE CHAIRMAN: Would you just stay there for a minute.

Mr. Paessler.

MR. PAESSLER: I think that if the District were to chlorinate and none of the Virginia political jurisdictions did so, then I would agree to those figures, but I don't think that we should let that assumption stand that Virginia communities would not chlorinate. I think that they all have, as is our understanding, facilities for post chlorination, and when such a matter becomes a factor in the overall picture, then it is presumed that all the Virginia communities would also chlorinate. Despite the fact that Arlington has only primary treatment, it was quite possible on the basis of the knowledge that we have to add sufficient chlorine to reduce the bacterial population to a small amount, as it would be possible in chlorination of the secondary effluent. It would cost much more and be expensive, but it could be done.

On the assumption of chlorination all the way around there ought not to be very much disparity in the relative percentages of bacteria of coliform origin discharged from Virginia and the other discharges in the area.

MR. KITTRELL: That would be true, but it would go back to 75/25 in that case -- something like that.

MR. WALKER: Mr. Chairman, may I suggest that the remark from the gentleman down here from the Health Service that as of this date the coliform would be 99 percent and one percent in the District of Columbia, be modified to say if the Virginia plants did not operate their chlorine facilities to become available, that would be true and I think it would put it in the proper perspective.

MR. ATKINS: I think that we might say in the absence of effective chlorination that would be true.

MR. KITTRELL: I was going on the fact that we had assurance from Mr. Auld that they were going to chlorinate but we did not have such information from Virginia then.

THE CHAIRMAN: Thank you, Mr. Kittrell.

MR. WALKER: On the same basis there would be the same percentage of treatment in Virginia, if they stopped the chlorination.

THE CHAIRMAN: Mr. Walker, I might indicate that this is based on more than just an assumption. I think what this is based on, as I recall, was the report of the field trip of Mr. Kittrell to these plants and the information he elicited from the plant operators that chlorination was not being used to chlorinate the effluent. It was not just an academic assumption.

At this point, I think we would like to call upon Virginia to outline proposed specifications and plans that the Virginia communities have for any remedial action which may be indicated.

MR. WALKER: Mr. Chairman, I think all of you fully appreciate the fact that I am speaking for the Virginia Water Control Board and not for the areas in Virginia which are contributing to this pollution of the area. Consequently I am not able to tell you what they propose to do. I can only tell you about what we have attempted to do, and what we contemplate doing insofar as the Water Control Board is concerned.

In the first place, to go back, Virginia water control law went into effect in July, 1946. Arlington had remedial treatment which was quite inadequate, and the first step of any consequence toward abating existing pollution as against prevention of new pollution, was by Arlington when it did provide, I believe, complete primary treatment to its sewage, and that was quite a number of years ago.

Thereafter, after very considerable delays and considerable effort on the part of our Board and I hope other people I know, and a great many of the other organizations were helpful in that, Alexandria has provided primary and secondary treatment for all of its sewage, with the exception as I understand, of a minute amount of polluted sewage is bypassed at the time of heavy rainfall.

We have had the problem, which all of you perfectly well understand, of a tremendous build up in population in that area since there has been an effective law to prevent new pollution and to abate existing pollution.

A lot of difficulties in the early stages were due to the fact that there was no concrete evidence that the

District of Columbia was going ahead, and we were finding Virginia communities complaining about the fact that they were requiring them to treat their sewage and we contributed a very small part of the pollution load in the area.

It has been our philosophy in the administration of our laws to say that the Virginia communities had the responsibility under the Virginia law that they had to comply with regardless of what happened to the engineering. We have continued that attitude. I must confine my thinking to the present. I don't see how we can tell what the future is going to be. I think it would be worthless if I, at this time, attempted to set a time table for things to be done by other communities at some future time. The Water Control Board will continue to do everything it can to keep up or keep ahead of the abatement program in this vicinity. As the Water Control Board of Virginia presently sees the situation the treatment in Alexandria, despite our discussion here to the contrary, seems to us for the time being to be adequate. If they aren't using chlorination facilities which were required of them, that is another matter. The Fairfax area with construction now in progress we feel is reasonably meeting the existing requirements of that area.

So it is the position of our Board, presently and for the foreseeable future, and with allowances for further build up in population which may change, that those two communities are meeting their responsibilities. In the case of Arlington, it is somewhat different in that Arlington is not now providing secondary treatment. We feel that they should provide secondary treatment and our discussions with Arlington on the subject are active at the present time. Arlington has proposed to our Board that that be delayed until 1970. Unfortunately I note that the Wolman Report seems to agree that this is a reasonable objective. The present thinking of our Board is that it is not unreasonable. It would not be accomplished before that time. All I have to say to that is that in the position we are taking, we are going to try to continue to keep up with it. We don't mean to be uncooperative. Cooperation is a matter of deed and not words. I think a whole lot of us would accomplish a great deal more if we would work more and talk less.

THE CHAIRMAN: Thank you. Are there any questions or comments on my Walker's statement.

MR. BROWN: I would like to ask a question, Mr. Walker, so I will be perfectly clear, was it implied in your statement, Mr. Walker, that you intend to keep pace in the elimination of pollution from Virginia, with the District of Columbia and Maryland?

MR. WALKER: That is perfectly true, sir. We have done it and we expect to continue to do it.

MR. BROWN: Thank you, sir.

THE CHAIRMAN: Do you have any questions?

(No response.)

THE CHAIRMAN: For our clarification, now, as I understand Mr. Auld's plans and the District's plans, they plan to have secondary treatment in operation by '58 and expand that by '65 to effect 80 percent BOD removal.

MR. WALKER: May I ask a question right there? Is that 80 percent removal of what percent of the total sewage?

MR. AULD: Under the present system, I would say two percent of our sewage.

MR. WALKER: In other words, in 1958, at the end of the year, you expect to have 80 percent removal from 98 percent, is that the case?

MR. AULD: Yes.

MR. WALKER: That is what I wanted to clear up.

THE CHAIRMAN: By 1966 that would be 80 percent of 100 percent.

MR. AULD: I think Plan C may in the aggregate reduce the two percent escape to one percent minus, so that we would have 99 percent plus then receiving treatment. We would never get to 100.

THE CHAIRMAN: I think from the position of the Federal Government, and I would just like to conclude this, what we are interested in is equity. All we want to establish is that the Virginia communities on the same river are doing the same thing as the District is doing, and that we all consider necessary for a relatively clean Potomac River.

As I understand it, the Alexandria plant has a secondary treatment; is the treatment at Alexandria comparable to what is now proposed by the District with their improved Blue Plains plant?

MR. PAESSLER: Yes.

THE CHAIRMAN: Are there any comments from the District on that.

MR. AULD: I have a comment, quite unrelated to make before you close up.

THE CHAIRMAN: Now the next point I think we have is that you have indicated that Arlington provides primary treatment and not secondary and that treatment, we will say, would not be comparable with what would be provided, is that correct?

MR. PAESSLER: Generally that would be true. It should be pointed out that the operating records of the Arlington plant show that the plant is not loaded now up to capacity. It is giving a higher degree of primary treatment than would normally be expected under complete loading conditions.

THE CHAIRMAN: Does that approach 80 percent BOD removal?

MR. PAESSLER: It does not. About 45 percent.

THE CHAIRMAN: Now, as far as Fairfax plant is concerned, I understand they have a slightly more complicated situation there. Would you say that the Fairfax plants will work out to be providing comparable treatment to Blue Plains or Alexandria -- as Blue Plains is improved and Alexandria is operating now?

MR. PAESSLER: The Fairfax situation cannot be dismissed with a wave of the hand, because a number of treatment plants are located on tributary streams and do not directly affect the Potomac River. It is therefore in a special catagory in that respect. The plant that does affect the Potomac River most directly is the so-called West Gate Plant, which provides an intermediate degree of treatment. It is, however, somewhat downstream, and the River has had at least a partial chance to recover.

THE CHAIRMAN: What level of BOD removal does it provide?

MR. PAESSLER: It wouldn't be up to 80 percent. Perhaps 50 or 60 percent.

THE CHAIRMAN: Do any of the other Fairfax plants provide secondary treatment -- the ones on the tributaries?

MR. PAESSLER: All of them do now, or will shortly.

THE CHAIRMAN: And do they provide for 80 percent secondary treatment?

MR. PAESSLER: They provide that degree of treatment or much higher.

THE CHAIRMAN: I see.

MR. WALKER: Many of those are on very small streams and extremely adequate treatment is provided.

THE CHAIRMAN: Yes.

Well, Mr. Auld, do you care to comment?

MR. AULD: I just want to supplement what I said before. This has nothing to do with Virginia. It does with Maryland. In describing the work which we propose in the District of Columbia, I neglected to mention the fact that the Suburban Sanitary Commission is making a substantial capital contribution toward the expansion of Blue Plains. That is in the nature of a joint facility being supported by Maryland and the District of Columbia.

THE CHAIRMAN: As I understand Virginia's position, I think, at least as far as I am concerned, it is entirely reasonable that your treatment would be -- and the advances the Virginia communities would make -- would certainly be adequate to meet the situation, and will be comparable to what the District is doing, in view of the location and place you are on the river. Is that correct?

MR. WALKER: I think that is perfectly correct; up to this point we have been ahead of it, from here on we don't expect to be behind.

THE CHAIRMAN: Is it contemplated in the future that West Gate is going to give full secondary treatment?

MR. WALKER: Under the Water Control Law we have the authority at any time to require any plant to increase their treatment. May I answer it this way? We are going to keep up with you.

THE CHAIRMAN: The point is, from the viewpoint of the folks in Maryland and the District, and of our operation in this, I think we have to have an equitable solution. The same requirements should be applicable to all parties concerned.

Now, as I understand it, most of the Fairfax plants will provide 80 percent BOD removal or above because of the location on these tributary streams. The West Gate plant at the present time is not now. In view of the equities of the situation, do you think that we might say that all the plants perhaps in Virginia may provide comparable treatment?

MR. WALKER: I think you are putting entirely too much emphasis on an awfully small thing. I don't think it will be possible at this time to tell you that on a certain date treatment will be brought up to a certain point. Again I say to you, you won't have trouble from Virginia.

THE CHAIRMAN: Let me pursue this point further, with regard to the Arlington plants, would you care to specify a date there? Now, as I understand it, Arlington is providing primary treatment, and it would seem as compared to the Alexandria plant, and most of the other Fairfax plants and the Blue Plains plant, they will be providing less treatment than those plants. Now, can we have a statement as to the plans of Virginia for Arlington, or of Arlington for the future?

MR. WALKER: I have covered that as well as I can by telling you that the matter is under attention and no conclusion has been reached. I cannot go further than that. It would be impossible for me to tell you that Arlington will, on certain date, after certain things are accomplished. The Wolman Report said that there was no need for them to do it until 1970, and that isn't helping us. The difference between primary and secondary treatment for Arlington will actually be a very minute problem in that whole area. That doesn't mean that they aren't obligated, and it isn't their responsibility to meet that. All I can say to you is that the Board is doing everything it can to bring it about. I can't tell you the date.

THE CHAIRMAN: I think the situation we are faced with is one we very frequently find in complex situation. Obviously, if the District of Columbia at Blue Plains is constructing their plant to provide a cushion for further growth that is anticipated until 1980, and the other Virginia plants in Fairfac County and Alexandria have provided a cushion, we always have a situation where if one community lags behind, they cannot be held to be a substantial contributor to pollution alone, from a purely theoretical point of view, and ye they are not keeping pace. We can see that situation where we have twenty contributors to pollution, and if nineteen of the pollutors do clean up and one continues polluting, it may be a relatively minor one, and not be creating much, and you may say that it is insignificant, but I think in the operation of most of the regulatory agencies in the States, in facing that we recognize that we try to treat all alike, and on an equitable basis. If they were contributing to this pollution, we should expect them all to proceed to abate it. I think that, as far as I have been able to determine, not going to go into Virginia, but that has been the policy of most of the operations of the State agencies.

MR. WALKER: After serving twelve years on the State Water Control Board and ten years on the Ohio River Commission, I am well aware of that.

THE CHAIRMAN: Let me ask if the other States -- because they are the ones who are going to be affected -- Maryland, and the District of Columbia, in relation to the Arlington plant and the Fairfax West Gate plant, whether they wish to make any comments from the point of view of the water use of the river by their citizens.

Mr. Brown.

MR. BROWN: I am a little bit at a loss as to how I could comment in that direction. I am extremely interested in the several jurisdictions keeping pace in the elimination of pollution for which they are severally responsible. I continue to be somewhat puzzled by the position which our colleagues from Virginia have described in keeping pace without there being a fairly definite indication of policy as to how Virginia communities will comply and within what period results will be attained. I recognize that they have difficulties in respect to the issues, but it still leaves me somewhat at a loss asto the relative evaluation of the accomplishments that will take place. I feel very definitely that all three offending jurisdictions should be prepared to get together here on a schedule. I think from the standpoint of both the District of Columbia,and as we will outline, for Maryland, that is definitely being done.

I don't doubt the interest of our Virginia colleagues, but,I have indicated, I am somewhat at a loss as to how it will be done.

MR. WALKER: Do you see any way possible for me to tell you any more than that?

MR. BROWN: I can cite you an example, Mr. Walker, of the pattern which we use for certain things in Maryland, from the standpoint of State policy. In that State, the Board of Health is vested with the definite responsibility for securing plans with water pollution and control objectives. In the absence of agreement from the communities to achieve certain objectives, our Board has always been prepared to step in and direct that certain things be done within a specified period, which, of course, must be reasonable under the law, and it is always carefully observed by our State legal authority.

MR. WALKER: AGain I would like to say if the policy had been pursued we would all be in a better shape in cleaning up if Alexandria, for instance, caused the District of Columbia to move along with them. We would be pretty happy here today, wouldn't we?

THE CHAIRMAN: Does the District of Columbia have a comment?

MR. CARY: Mr. Walker has indicated that the matter with respect to Arlington, which seems to be the only question left to be resolved, is now under consideration by his Board. Possibly instead of telling us what the answer would be, he could tell us when the answer would be available. That might add some solution to the problem.

MR. WALKER: When the answer is available to us, you will have it.

(Laughter.)

THE CHAIRMAN: In all the previous conferences that we have had, as an indication of the progress that the Public Health Service makes, I think we followed the same policy as enunciated by Mr. Brown. That is, we find it very difficult to determine whether affirmative progress is being made or is not being made unless we have set up a definite date and are able to measure specific action by that date.

Now, I think from what Mr. Auld has told us, we have these bench marks, and I think in all the other conferences we had them.

I think we have a problem at this end of town about eating, and it is now twelve thirty. I would suggest that we adjourn and reconvene at one thirty. For your convenience there is a cafeteria in the basement of this building and one across the street, in what we call the South Building, and there is a restaurant on the first floor of each of these buildings.

The meeting will stand adjourned until --

MR. WALKER: Will anything come up so that you will need all of us?

THE CHAIRMAN: I think what we will talk about is specific plans for remedial action. Now, one of the problems we are going to be faced with is, as I have indicated at the beginning of the conference, Mr. Walker, is coming up with a time schedule, that is, a time schedule with dates for specific remedial action. I think we will attempt to discuss the aspects of that, and come to conclusions with respect to the District of Columbia, Maryland and Virginia this afternoon.

MR. WALKER: As I see it, although I am perfectly willing to stay, I don't see that I can contribute. There are no other useful things that I could do.

THE CHAIRMAN: That, of course, would be up to you, sir.

MR. WALKER: All right.

THE CHAIRMAN: Then, gentlemen, we will stand adjourned until 1:30 o'clock p.m.

(Whereupon, at 12:30 o'clock p.m., the meeting was adjourned until 1:30 o'clock p.m.,of the same day.)

SF ends
LL fols.
Pollution
of Inter-
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AFTERNOON SESSION

(1: 50 p.m.)

CHAIRMAN: May we get started again, please?

If we can resume the conference now, I think we were near the end of Virginia's presentation on plans for specific remedial action.

I think possibly to round out the picture, we may call upon Maryland now before we go around again. The first session of the conference brought out that the Washington Suburban Sanitary District collects the bulk of Maryland's sewage and transports it to the Blue Plains plant for treatment. However, Maryland does have or may have a problem on the Potomac in the area north of what is depicted on the map here, and Mr. Brown may want to cover that.

MR. BROWN: Mr. Chairman, in commenting upon Maryland's position in this situation I would mention specifically several of the developments which have already been touched upon by Mr. Auld in his report. Maryland has essentially completed necessary construction which has resulted in abatement of pollution which was contributed from our area to the Anacostia River through the abandonment by the Washington Suburban Sanitary Commission of its Bladensburg plant with connection to the interceptor of the Washington system.

The completion of construction in the Cabin John Creek area, an interceptor to pick up the sewage from Rockwell is in an imminent stage of completion which will leave the discharge of incompletely treated sewage from the Rockwell community going into a branch of Cabin John Creek.

There is now definitely in the works for completion by mid-1959 or the early fall of that year an extension of the Rock Creek interceptor to pick up Daytonsburg and there is also an overloaded sewage treatment plant at the present time. Authorities in Maryland have gone into great length and when I use the word "authorities" I mean not only the state but local authorities, in working out a plan whereby the sewage that originates at the new Atomic Energy office facilities at Germantown will be brought over by pumping station and force main to connect with the facilities of the Washington Suburban Sanitary District at Gaithersburg.

Thus, our lot and our destiny, to some very large measure, is tied in with that of the District of Columbia in planning for coordinated comprehensive sewage transmission and treatment facilities which bring to a common point for treatment and disposal all sewage originating in a large area of Maryland. It is this area which has in the past contributed a share of pollutionthrough one mechanism or another to the Potomac River in this vicinity.

At the time that these connections with the District of Columbia system are completed, substantially 100 per cent of the sewage originating in Maryland will be conveyed into an adequately designed and constructed and operated treatment works. I would point out again,as was mentioned by Mr. Auld, that this is not a matter of Maryland's bringing sewage to the District of Columbia door and saying, "Here it is." The authorities in Maryland have coordinated this program with that of the District, not only by arrangements for financing the cost of the treatment, but in sharing the capital costs of expanding and reinforcing facilities within the District in order to accommodate the sewage load for Maryland. This has been the pattern of solving this problem, and it is, as we see it, the pattern of meeting this problem and continuing to meet the need in the future.

We are greatly concerned by implications with respect to need for sewers and sewage treatment for the upper county area where there is no pollution at the present time, finding its way into the tributary streams of the Potomac; but which need we feel must be met if the overall objectives we have been considering are to be maintained in the future.

I don't know just how far you might want me to go into this point at this time. If it would be agreeable to you, I would prefer to go into that at greater length at a subsequent point in the program.

CHAIRMAN: Thank you. Are there any comments or questions on Mr. Brown's statement?

Before we get into Item D of the agenda, the responsibility of the Federal government, which is somewhat of an abrupt change, we would like to ask the various groups whether they have any other participants they have invited whom they would like to make statements at this time, either official groups or citizens groups or community groups.

Does Virginia wish to amplify their statement or have any other participants speak at this time?

MR. PAESSLER: I might suggest that if representatives of the Virginia communities here wish to make statements, they do so.

CHAIRMAN: We would be happy to have them at this time, if possible. Would you like to designate them and ask them?

MR. PAESSLER: If they wish to speak, they may volunteer at this time. I don't think we will ask them.

CHAIRMAN: Are there any representatives of the Virginia communities that may wish to make a statement at this time?

Would you come up to the lectern, please, and give your name?

MR. DOE: I am Mr. F. H. Doe, Jr., Sanitary Engineer. Mr. Chairman, I have a statement of Arlington's position which I would like to present for the record.

CHAIRMAN: Thank you. It will be accepted. Why don't you just read it into the record?

MR. DOE: All right, sir. My statement is divided into three parts: Background, Current Program, and Future Plans.

"Report on Arlington's Pollution Abatement Program

"Background: Arlington County constructed a primary treatment plant with a capacity of 5 million gallons per day in 1937. The original program also included the construction of 75 miles of lateral sewers and 25 miles of trunk sewers.

"In 1953 an enlarged primary plant with a capacity of 20 million gallons per day average daily flow was completed. The present plant is designed to remove 25 to 30 per cent of the B.O.D. and 50 to 60 per cent of the suspended solids when the average flow reaches 20 million gallons per day.

"The present average flow is 14.8 million gallons per day, and the plant is currently removing approximately 45 per cent of the B.O.D. and 73.6 per cent of the suspended solids.

"Arlington has a separate sanitary sewer system. There are now 384 miles of sanitary sewers in the County.

"About two years ago Arlington acquired additional land across South Glebe Road from the sewage treatment plant to provide space for secondary treatment facilities."

The second item is current program.

"Plans and specifications have been submitted to the State Water Control Board for three projects covering improvements to the sanitary sewerage system. The first two projects have been approved for a federal grant under Public Law 660 and are currently being reviewed by the Public Health Service.

These projects are:

1. Screening, grinding and grit removal facilities at the sewage treatment plant.

2. Larger force mains and gravity sewers at four lift stations.

3. A relief sewer along lower Four Mile Run.

"The estimated cost of the first two projects is $298,245. Of this total, $77,071 will be a federal grant. The third project will cost about $600,000 and will be paid for wholly with County funds.

"Future plans:

The Four Mile Run Relief Sewer will not function until a lift station is built at the sewage treatment plant. Some consideration is now being given to the possibility of a bond issue for public improvements. It is therefore quite likely that funds for the lift station will be included in such a bond issue. The estimated cost of the lift station is approximately $600,000.

"With respect to the proper timing for the installation of secondary treatment facilities at Arlington, we quote from a condensation of part of the Report on Sewage Disposal in the Metropolitan Area of Northern Virginia which was prepared by Alexander Potter Associates and Greeley and Hansen for the

Interim Committee, for the four Virginia communities, in June 1954. This condensation is entitled "Sewerage System Planning in Arlington County, Virginia" and is dated October 9, 1956."

I read from part of Pages 8 and 9:

"'Progressive Program of Improvements.

The report of the Engineers to the Interim Committee recommended a program of construction that would progressively increase the degree of treatment provided the area's sewage is in keeping with its growth increase on the one hand, the river's fixed capacity for assimilating pollution on the other In other words, taking into account the announced plans and schedule of the District of Columbia respecting certain expansion and betterments of its treatment facilities, the Virginia municipalities would have to adopt a program of betterments respecting degree of treatment to be afforded its sewage so that on an overall area basis, it would provide reduction in pollutional load discharged to the river to the extent indicated in the foregoing tabulation'"--which tabulation sets up the various degrees.

"'Thus, while the program under way by the respective jurisdictions at the time of the study'"--this was 1951 when it began--"'was of a varied nature (no treatment as in Alexandria and Fairfax County to 15 per cent B.O.D. removal

8 in Arlington and 33 per cent in the District), the planning program was designed to progressively provide for the same degree of sewage treatment on the part of each jurisdiction. This will be observed from the following tabulation:

TREATMENT PROVIDED BY PROGRAM

(Approximate Percent Removal of B.O.D.)

Areas	1950	1955	1957	1960	1970	1980
D.C. and Maryland	33	33	55	77	76	75
Arlington County	15	47	45	42	77	75
Fairfax County	0	55	58	60	66	75
Alexandria	0	0	80	77	76	75
Combined Basis (Weighted)	29	33	55	73	75	75 '"

Keep in mind, gentlemen, that this problem was met originally some time ago. I might comment that these standards are not quite as high as recommended in the Wolman Report, but I believe that was due to the higher population estimates.

"'A most important aspect of this plan, however, is that during the years the various communities will be approaching the "equal degree of treatment," the overall effect of the treated sewage discharge to the Potomac from the area as a whole will be within the river's natural assimilation capacity. This is due principally to the fact that the influence of the District of Columbia is preponderant and even the immediate provisions of "complete" treatment in the Virginia jurisdictions will not significantly outweigh the pollution contribution from the District and Maryland'".

"It is also appropriate to quote from page 26 of the 'Wolman Report,' dated October 1957. One paragraph reads as follows:

"'The Arlington County Sewage Disposal Plant, built in 1953 on Four Mile Run just southwest of the National Airport, provides plain settling and chlorination for sewage from a population of about 200,000 people. Present plans call for increased treatment and plant enlargements in 1970 and 1985 at estimated costs of $3,300,000 and $1,200,000 respectively. The date 1970 was estimated to be the time when the total load on the River would again exceed the limiting B.O.D. of 120,000 pounds per day. It was assumed that prior to that time removal of 77 per cent of B.O.D. from the relatively much greater quantities of sewage treated at Blue Plains would make it unnecessary to provide a high degree of treatment by Arlington County until 1970. Although earlier installation of a complete treatment plant in Arlington County would be desirable on esthetic grounds, there is probably no urgent reason for doing this.'"

"The Wolman Report quotes an estimated cost of $3,300,000 for the first stage of secondary treatment facilities. I believe this figure was taken from an early progress report of the Northern Virginia study. Our latest estimate for secondary treatment in Arlington is $5,000,000.

10 "The two engineering reports quoted above are in substantial agreement as to the approximate date (1965 to 1970) when Arlington needs to install secondary treatment. However, if higher water quality standards are adopted for the area, or if the area population increases faster than is now contemplated, or if it becomes apparent for some other reason that Arlington should speed up its program, I feel sure the citizens of Arlington stand ready and willing to do so."

CHAIRMAN: Would you mind waiting, Mr. Doe, in case there are any questions or comments?

MR. DOE: Certainly.

MR. AULD: I think Mr. Doe put his finger on one question that bears on this in his last sentence, and that is the standards which we are seeking to maintain. As I recall it, the Wolman Report is built around a capacity of the river of 120,000 pounds per day B.O.D. absorption, leaving a 3. minimum dissolved oxygen, and this schedule would probably meet that. I would just point out to the conference that the recommendations of the Interstate Commission which we received this morning would raise that minimum to 4. ppm and would have a significant bearing on percentages of removal.

CHAIRMAN: Do you care to comment on that, Mr. Doe?

MR. DOE: I have no particular comment.

CHAIRMAN: May we ask, for the record, does Arlington have any specific plans to provide secondary treatment at this time?

MR. DOE: Except as stated in the report.

CHAIRMAN: But you do not have a date for that?

MR. DOE: 1970.

CHAIRMAN: Let me ask one more question. You are providing primary treatment now at the Four Mile Run plant?

MR. DOE: That's correct, sir.

CHAIRMAN: Are you chlorinating the effluence?

MR. DOE: We are chlorinating the effluence.

CHAIRMAN: At this time I'd like to introduce some folks who just came in: Commissioner Karrick of the District of Columbia; Dr. Finucane, Health Officer of the District of Columbia and head of the official Water Pollution Control Agency of the District; and Colonel Welling, Engineer Commissioner of the District of Columbia. I believe Colonel Welling may have a few words to say.

COLONEL WELLING: Thank you, Mr. Chairman. I wonder to whom I am saying these words--to you gentlemen on the platform or to you ladies and gentlemen on the floor. Am I talking to you gentlemen on the platform? If so, I shall face that way.

Even though the temperature will be warming up a bit outside, I come in here a bit cold and I don't know the tenor of the developments here today. I do know the tenor of my participation in this proposition of pollution abatement and

12 water supply in the Potomac.

As you know, I head a water supply and pollution abatement committee for the regional conference, and that has put me into the forefront of the Potomac River problems which fac each of us. In the solution of those problems I find an extremely healthy attitude in an effort to create, to improve an unhealthy situation--a healthy attitude to correct an unhealthy situation/ and it's one of the most refreshing things I have to do in working with the people in similar business from the counties of Maryland and Virginia. As yet I haven't yet been working with the state authorities, but that will come.

I can't help but be encouraged in our prospects of coming up with a sort of river that each of us would like to see, if each of us has what I would consider to be reasonable goals. Dave Auld talked a moment ago of dissolved oxygen down in the lower part of the river, whether we are goingto have 3 or 4 parts; 4 may be difficult to attain, and I am interested in what we can do and the other day I suggested to our WaterSupply and Pollution Abatement Committee that maybe we ought to take in between 3 and 4 and establish as our standard 3-1/2, which is above the Wolman recommendation and a bit below what the Interstate Commission recommended to us.

I am not going to indulge on your time covering ground that may have been covered by many other people here today, but one of my primary continuing goals in this city--and I have established a few of them--I think they number only seven--I have limited capacity, so I have a limited number of goals--pertains to the water supply and pollution abatement measures pertaining to the Potomac River.

One of our colleagues from Arlington County said the other night in a meeting of ours that there is nothing wrong with us that money won't correct, and perhaps we could come up with the money if all of us can keep a united front in trying to solve this situation which presently does not appeal to any of us.

I thank you for the opportunity of intruding on this meeting and I'll step down now and listen to what goes on. Thank you very much.

CHAIRMAN: Thank you very much. Are there any other Virginia invitees who may want to talk at this time? I think Mr. Paessler extended an invitation to all those Virginia communities which did want to come.

MR. LUNDBERG: I am A. T. Lundberg, County Manager, Arlington County.

Mr. Chairman and members of the board, we are happy to be able to come here and listen in and give you such information as we have. We are ably represented by the folks from Virginia. However, I think I would like to add just one little bit. Most of you folks are persons who are well qualified and versed in sanitary engineering, and it is in that direction that

14 I would like to speak. This problem is one of facts as they represent the conditions which we are trying to overcome.

Arlington County, as a part of the State of Virginia, working through the state officials, is more than willing to take on its shoulders its share of the obligation to make the Potomac River a better river, to have our borders and the borders of the District of Columbia , passing through Maryland and Virginia, improved. We would like to leave just one thought. That is this: We are interested in objectives. We are interested in bases. We want to take part in a program that is based on a factual, systematic approach to the problem.

There are many people working on standards. I think that the standards factor is a real one. I think it is the basis on which a positive constructive schedule can be determined, and I am sure that Arlington County will adhere to any program that is based on standards; that is based on positive objectives, that can be written down, handed out, and read.

We find in Arlington County that when we need something, if we have the facts to back it up, facts to support it, the people of Arlington County have never failed to come through with what it takes to do it. However, it is rather difficult to reach out into the air and say when--how about this date or that date? We are very much interested in standards, and we're very much interested in the application of standards to the river, and we will adhere to any program that is based on standards from which a schedule is derived.

Thank you.

CHAIRMAN: Thank you. Are there any comments or questions? I'd like to call on the District now.

MR. CARY: Earlier we indicated that the District of Columbia government, in addition to its official family, has its representatives on the Washington District Corps of Engineers, National Capital Parks, and National Capital Planning Commission. If there are representatives of these agencies present at this time who would like to speak, we would be glad to have them do so.

CHAIRMAN: Are there any? While the agencies are perhaps making up their minds, I would like to read a telegram which may be appropriate at this time. It is addressed to us from the Federation of Citizens Associations of the District of Columbia:

"The Federation expresses interest in your conference on interstate pollution problems of the Potomac River. We trust that your decisions today will establish definite goals for immediate action in obtaining long-delayed objectives and expedite improvements to the river waters in our nation's capital."

It is signed James A. Willey, Vice President, Federation of Citizens Associations of the District of Columbia.

16 Now, in response to Mr. Cary's question, are there any citizens groups or other organizations from the District who wish to be heard?

MR. D. V. C. BIRRELL: Gentlemen, the Corps of Engineers has at this time no well-consolidated opinion or position, let me say, on the subject of pollution. We have reviewed or read the Wolman Report and individuals in the Washington District can wholeheartedly support many of these proposals.

As you know, the Corps of Engineers is engaged in a survey of the Potomac River Basin on a comprehensive basis and one of the conditions on which we must base our survey is the amount of flow in the river which must be sustained to control or abate pollution by dilution or flushing, if you will; and the amount of water together with the amount of water needed for water supply and other purposes is a very critical item in order that we might calculate the amount of storage at any particular time on a time schedule.

So this item is something that should be determined at as early a date as possible, in order that our engineers can begin to formulate and crystallize definite quantities with regard to up-river, if that is what seems to be indicated. I would like to leave with you just that one item that it is most important to determine the quantities of flow in the river as they are related to B.O.D. and the other critical items with which you are directly concerned. Thank you.

CHAIRMAN: Are there any others?

MRS. ROSENBLUM: I'm Mrs. Haskell Rosenblum from the Citizens Council for a Clean Potomac. I understand that you had a statement, a telegram entered in the record this morning and the statement that I have here is more pertinent to what was discussed this morning than what might come later, so I'll just enter it in the record, unless you prefer that I read it.

CHAIRMAN: Is that just one page?

MRS. ROSENBLUM: Yes.

CHAIRMAN: You may read it.

MRS. ROSENBLUM: The Citizens Council for a Clean Potomac, an organization which is composed of almost 60 associations and many individual members of the States of Maryland, Virginia, and the District of Columbia, was established in 1953. Its purpose is to work toward pollution control and abatement of the entire Potomac River and its tributaries.

It is interested also in certain aspects of conservation and development which are not pertinent to today's discussion. The immediate goal of the Council is the purification of the river to facilitate swimming, boating, and fishing. It therefore supports all sound measures that will clean up the Potomac.

At the present time, the Council is working toward the adoption of a program for 1958; tentatively the objectives include the following points:

Support of the District of Columbia Board of Engineers' recommendations for an adequate sewage system of the District of Columbia.

Opposition to the discharge of sewage or effluence into the Potomac between the mouth of the Monocacy River and Hains Point.

Recommendations to the sanitation officials of all jurisdictions in the Washington metropolitan area to work out a long-range area-wide pollution elimination plan through whatever agencies are available.

We are at present also supporting all possible means of continued and increased financial aid to communities for pollution abatement programs on both the Federal and state levels. When the Commissioners held hearings in October on a new proposed public works project, the Citizens Council presented testimony in support of the sanitary engineering aspects of the program. We are much concerned about this situation. We know the unfortunate limits of the District's finances. We are supporting borrowing for capital improvements but we are well aware that the present program represents almost the entire resources of the communities for some time to come.

In the program as it stands, less than a tenth of the project's second proposals are to be undertaken in a six-year period, although all of it should be completed within eight years.

Much of the work will be in an inoperable condition after it is built because of lack of funds to make the necessary connections. We understand the necessity for the undertakings in advance of highways and development, but would very much like to see some concrete proposals for financing the balance of the 130-million-dollar project so that the work undertaken will not have been in vain.

CHAIRMAN: I think for the record we should indicate that Mrs. Rosenblum was invited to participate by the Interstate Commission on the Potomac Basin.

I think we may indicate, before we go on to the next point of the agenda, that the District representatives have pointed out that one of the major undertakings we have discussed here is Plan C of the proposal of the engineering report submitted to the District for the elimination of storm water overflows in the District.

Now if there is any further discussion of Plan C or the effect of Plan C, I think we might have that now. I think I may at this interim point summarize the discussion this morning. Mr. Auld pointed out the Blue Plains treatment plant by the end of 1958 will effectuate 80 per cent of B.O.D. removal by secondary treatment. Additions up to '65 will give full secondary treatment and also correlates will be provided. In addition, Mr. Auld pointed out that from an engineering point

20 of view, the work for Plan C to reduce storm water overflows could be accomplished within an eight-year period and this was largely a question of financing whether this could be done. I think the consensus of the conferees was that the accomplishment of that would be extremely desirable within the eight-year period, to have that in operation by 1966, rather than waiting until 1975 when we would perhaps be faced with the impact of further expansion in the metropolitan area and would find ourselves a little behind.

Now if there are further comments on any aspect of Plan C we would be happy to have them. Before we get into that, I'd like to introduce Mr. Edmund Baxter, the Regional Director of Region 3 who, I see, has come up here for the conference.

Now the next point on the agenda deals with the responsibility of the Federal Government. This was put on the agenda because of the natural interest, I guess, in this aspect of the problem, expressed by some of the conferees. At this point I'd like to just throw that out for discussion and start at this end of the table and ask whether the Maryland delegation would like to speak on that?

MR. BROWN: I would, Mr. Chairman, desire to speak on this issue. This phase of the conference agenda is of interest to me because it provides an opportunity, I believe, to provide a bit more perspective on this problem of dealing with abatement of pollution in the Washington metropolitan area, both now and in the future, and in maintaining a pollution-free Potomac River for the several purposes advanced to us of interest to us.

We have heard the responsibilities and plans of the several jurisdictions adjacent to the Potomac in this area. There is a coterminous jurisdiction here, rather non-specific, but here, nevertheless, which is represented by the seat of our Federal Government. I will ask that you be aware that I am discussing this from the standpoint of not making any categorical statements with regard to responsibility. We feel in Maryland quite keenly that there are factors relating to our responsibility for pollution control which in some measure may be beyond our ability to handle, construction-wise or financially. I believe that is similarly true of our adjoining State of Virginia, and likewise in the District of Columbia.

At the present time we are feeling a very considerable impact upon Maryland in the vicinity of the District because of the relocation or impending relccation of Federal agencies as a part of the Federal decentralizing process, as a portion of the national defense program. We already have relocated on Seneca Creek watershed the Atomic Energy Commission office facility. I am not critical of this relocation; however, that location is beyond any present capacity of authorities in

Maryland for handling the sewage, in particular to keep sewage treated or otherwise out of the District of Columbia water, source of the water supply. Efforts have been made to bring the sewage for the facility itself and the facility solely out of that watershed to Gaithersburg where it will be conveyed into the Washington Suburban Sanitary District, and thence to the District of Columbia for treatment. That is an admirable development, one which was done at our quite considerable urging. It in no wise, however, handles the development of sewage facilities for the satellite community which is now in process of developing in this watershed area.

The same will be true, we believe, with regard to the development which will probably surround the Bureau of Standards as it is relocated at Gaithersburg or nearby. In order to convey sewage from upper Montgomery County and perhaps from upper Fairfax and Loudoun Counties in Virginia into the type of overall treatment works that we are interested in today, would require the extension of an interceptor, doubtless, in the Potomac valley far in advance of the 1990 target date forecast in the Wolman Report.

If this is to be done or if it is to become a necessity as a result of the development which takes place as a result of necessary growth of activities at the national seat of government, I would wonder whether or not this should not be projected in some way into our discussion of overall needs for dealing with these problems. After all, the adequacy of what is done today is merely no better than the adequacy with which it will meet our problem in the immediate future. If we are to go ahead and develop these works, and I hope we are going to be able to meet this responsibility, I believe that that responsibility and whatever assistance, financial or otherwise, would develop as necessary only for the Federal Government would be focussed in some way upon our considerations now.

CHAIRMAN: Thank you. Does the Interstate Commission wish to say anything on this subject? Does the Public Health Service or the District?

MR. CARY: I think there are two things I'd like to say: First, I'd like to make just one point and that is we don't have to wait in the District of Columbia for relocation. We've already had it. On the other point I'd like to turn the microphone over to Mr. Auld who will extend those remarks.

MR. AULD: Mr. Chairman, this morning I spoke of the fact that the existing sewage system of the District of Columbia is bursting at the seams and part of that is the result of flows going through it which originate outside the District of Columbia. I therefore concur with what Mr. Brown has said, that we are experiencing a definite effect of Federal development, even outside the District of Columbia. We may also look for similar effects and increasing problems on the

24 Virginia side. There may be comment from Virginia on these points, but it should be remembered that right now we have the new National Airport at Chantilly covering some 8000 or 9000 acres, we have the Bureau of Public Roads, Central Intelligence Agency, and a small segment of the Bureau of Standards, all in Fairfax County. Inevitably these will generate sewage wastes themselves, and with satellite communities which will make a new problem. That problem is not far enough along yet to have a solution offered by the local communities; but however it is solved, it will have a definite impact on all the rest of us in the area.

For my part, in the District of Columbia, I feel we may lend some aid to the outside areas in their solution of this problem by having flows from them passed through our Scheme C system. The Federal advent, in any case, would also precipitate the day when Scheme C is needed. It will advance the construction date. It will certainly make anything which we can do from a self-supporting standpoint even less sufficient than if we had no such effect.

I'd like to point out something else, too. We are not the only city in the United States which has the combined system of sewage and problems like those of the Potomac. There are three that come to mind which are old cities of comparable size: Milwaukee, Cincinnati, Pittsburgh, and Alleghany County surrounding Pittsburgh. All three of those in recent years have

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25 had a combined system problem and sewage disposal problem and they've made certain solutions which have been widely handled as great clean-ups.

Milwaukee after exhaustive study, decided to keep the combined system of sewers and is putting in interceptors with capacity of a little over two times average that figure; and Cincinnati [illegible] which I understand are in the 2 to 3 range. Pittsburgh and Allegheny County are doing the same thing. Cincinnati and Pittsburgh, I believe, are going into primary treatment only. I point this out because we are suggesting five and a half [illegible] and in that way we will cut the duration of mixed overflows to something less than half what might be expected in those other cities. Quite frankly, our consideration in this is very largely because of the nature of this city and its relations to the Federal interests because it is the national capital.

If we do these things which seem necessary to meet suitable standards, I feel that clearly there is some measure of Federal responsibility to aid in this accomplishment.

CHAIRMAN: Are there any further comments. Does Virginia want to comment on this aspect of the problem.

MR. WALKER: I don't think there is any comment at this time because I don't think we visualize just what the problem is going to be

MR. AULD: Mr. Stein, I notice that you do have present at the conference Federal representatives. Is there no comment that the United States would present at this time on that point?

CHAIRMAN: Well, I think it's operating under the same prohibitions that we do and we have the same budgetary and administrative limitations which govern our aspect, as they do yours. I guess Maryland can speak with considerably more freedom on this, but the Water Pollution Control Act here at the present time presents the considered policy of the United States in this area. It does provide for a limited amount of Federal aid--obviously not the kind of aid or financial assistance you are thinking of in terms of the project you have in mind here.

Now, that is one aspect; and the other aspect, of course, is that the Public Health Service under law and on request can provide you with all the technical assistance we are able within the limits of our staff and appropriations.

So far as enforcement provisions of this Act are concerned, we handle those as a separate part of the Act. That is not even concerned with the financial aid provisions. We are empowered to administer. Dealing with fiscal policy of the government is something which of course is much beyond our scope, and in the government it is decided at a departmental level, after checking with the Bureau of the Budget.

I think any requests you make, of course, or any suggestions which would come, would no doubt receive full consideration and the recommendation of this department. Of course I can't speculate as to what direction that would go.

MR. BROWN: May I have a word, Mr. Chairman? I would like to second Mr. Auld's query for responsibility of the Federal government. I doubt that that could be done at this time from any representative agency of the Federal government, but I think that provision should be made, for providing some sort of statement on behalf of the Federal government in conjunction with any planned program for abatement of pollution as we have been considering. I think without it the record would be incomplete.

CHAIRMAN: Mr. Brown, I think we would agree with that. The Federal government, and I think the Public Health Service, in particular, will definitely go on record as to the type of remedial work we think is needed to deal with this problem; and I think that's what we would like to come up with now, unless you want to speak in terms of the area of Federal responsibility. We have a statutory duty, it seems to me, to indicate from an abatement standpoint, what type of work we think would be appropriate, and we would join with the conferees in that, as we have in other conferences.

MR. BROWN: I can respond only by saying that to the best of my knowledge, Maryland will continue to bear its full share of responsibility for the development of treatment works, pollution control works as they relate to the clean-up of the Potomac River in the Washington metropolitan area.

I indicate further that I believe our Federal counterparts have a share, as yet undefined, in helping to accomplish this overall objective.

MR. FISHER: I think the Congress or some agency in that level of authority would be able to answer this question, but it seems to me that there is a responsibility here over and above the responsibility which must be met by an ordinary municipality. I think that the Congress has some responsibility to deal with this problem from the standpoint of the citizens of the United States who come to the national capital to enjoy the attractions which are here, and to familiarize themselves with their national government. It seems to me the conference should bring about some kind of plan which would bring this to the attention of the Congress so that the Congress would recognize this phase of the problem and deal with it.

CHAIRMAN: We would be glad to include that in a summary. You may make any recommendation that you wish. By legal prohibition, some of us cannot join in that recommendation. Our function here is to serve as a medium whereby the states and interstate agencies can get together.

Of course, our recommendations will go in the summary of the conference so we can formulate that as we go along.

MR. CARY: I think the District of Columbia would like to join with what Mr. Brown has said with respect to establishing some base of responsibility so far as the Federal government is concerned.

CHAIRMAN: Perhaps at this point we can recapitulate before we summarize to see if we are all in agreement on the points. The first point or group of points have been set forth in the summary of the first session of the conference, which lays the basis for our being here.

1. That there is interstate pollution subject to abatement under the Federal Water Pollution Control Act occurring in the Potomac River, Washington Metropolitan Area;

2. That this pollution does contribute to the conditions which I indicated before--increased concentrations of coliform organisms which constitute a health hazard to recreational and commercial users of the river;

3. Deterioration of water quality resulting in serious impairment of the river as a residential, sight-seeing, and recreational area;

4. Impairment of water quality so as to render the river unsuitable for game fish habitation.

30 I think I want to put this out just as a word of clarification and caution, and that is if anyone has the notion when we are through here that we're going to have a pristine pure stream, I think Professor Geyer this morning gave you some indications of the enormity of the problem, even to get just a little bit closer to that ideal than we possibly can do here today.

Now, I think if we go down to the specifics we were going to discuss here, that the conferees agree that the District [illegible] plan [illegible] providing secondary treatment at the Blue Plains plant is satisfactory, and by the end of 1958 that plant will be effective in removing 80 per cent of the B.O.D. going through the plant.

We also agree that the additions contemplated by the District to be completed by 1965, providing full secondary treatment and 80 per cent removal of the wastes is also satisfactory. In addition, we would agree, I believe, that the proposal of the District that it consider the load going through the plant based on opopulation and other increases and the capacity and condition of the river, and make plans sufficiently in advance so that additional treatment is necessary beyond that contemplated to be completed by 1965 will be accomplished so the river will not again fall into a polluted state because of increased load going through the

31 Blue Plains plant--In addition, I think we are agreed that the District proposal to adopt the Plan C proposed by the consulting engineers, substantially Plan C, with such modifications as may be necessary to reduce storm water overflows within eigh years, and that is to be accomplished by the end of 1966, is appropriate; and that the conferees would recommend that that be done with every avenue explored to provide the appropriate financing for this work.

I would think, as a recommendation, as I gather the consensus of the conferees, we would think that the situation calls for at least a reduction of the installation of Plan C or its equivalent to reduce the storm water overflows by 1966.

Now, as far as the Virginia communities are concerned,--

MR. ATKINS: Before you leave the District, I'd like to suggest some discussion on chlorination plans.

CHAIRMAN: Yes. I think that plan, the secondary treatment of the Blue Plains plant, to include chlorination, presumably from the end of 1958 on, when secondary treatment went into effect, is satisfactory.

Now, as far as Virginia is concerned, I would like to, for clarification, throw this out and see if I understand this. As I understand it, the Virginia communities have said, as a matter of policy, that they recognize their responsibility for maintaining suitable conditions in the Potomac River

32 and the work, the real work done there, will be commensurate with that responsibility and the work done on the other side of the river. Now, what we have not gotten in Virginia is a time schedule such as we have in the District, and I think I would like to ask if we can formulate that a little more precisely--how we want to leave that.

MR. ATKINS: Mr. Chairman, the District of Columbia, as I understand it, would have secondary treatment in 1959. Well, that, perhaps--I don't know--

MR. AULD: 1958.

MR. ATKINS: I raise the question that I think that engineering work to be done on the Virginia side might be not feasible for them to be as far along as yours in constructions. I wonder whether that September 1, or whatever that date is, is not too early to expect secondary treatment on the Virginia side. Give them due allowance for engineering and construction time.

MR. WALKER: Mr. Chairman, in view of your remarks, I think it would be better stated if recognition were given to the fact that Virginia has already accomplished the things you are seeking to accomplish, with the exception of a very minute problem of secondary treatment in Arlington. In other words, your remark may be construed to mean Virginia has thus far done nothing.

Actually we are way ahead of Washington except for that very minute thing.

CHAIRMAN: Those remarks are well taken. I think if you examine our summary of other conferences, if this follows that, due recognition will be given to the work done by Virginia and cognizance will be taken of the fact that a plant for secondary treatment is in operation in Alexandria and plants are under way in Fairfax for secondary treatment. I certainly think that is a very good point.

MR. WALKER: Now, one other point. If you properly bring it down to the very small part of the whole with respect to secondary treatment for Arlington, I think it is quite out of reason to expect that to be done by September, 1958. It can't be done by that time. But as to the time when it can be done, you have heard Arlington's report here and I can only add to that that the State Board, the Control Board expects to follow through and expects it to be done in what we think is a reasonable time. We can't say here today what that reasonable time is.

CHAIRMAN: Let me just raise two more points which have come up. One, are there any future plans to bring the West Fairfax plant up to secondary treatment?

MR. WALKER: Would you like to answer that, Mr. [illegible]sler? As far as I know, it is not now on our agenda.

MR. PAESSLER: That is correct.

CHAIRMAN: There is one more point and I think we should clarify this. This morning Mr. Auld was asked about 80 per cent removal, dealing with the percentage which would not be contained in the combined sewers in the District of Columbia which would not be processed through the plant. Now as far as the Virginia plants are concerned, I would imagine unless there were any old cities other than Alexandria--how about Alexandria? Do they have combined sewers which may not be processed through that secondary plant--secondary treatment plant in that city?

MR. PAESSLER: I think Mr. Walker commented on that. A small portion of the sewer system in Alexandria is combined. Our understanding of the matter, in conference with the Alexandria people, is that it's only during prolonged periods of wet weather that there are any overflows from these. The amount of overflow is small at that point, especially in relation to the District.

CHAIRMAN: Thank you. Now, in this respect I turn again to the Public Health Service representative. We have this problem with the Virginia plant taking full cognizance of what is being done in Virginia, with two possible problem areas. I say "possible" advisedly. That is the notion that the Arlington plant will eventually come up to secondary treatment

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without a specific time schedule at this point, whereas we have a full time schedule for all District remedial work; and secondly, that the Westgate Fairfax plant has no plans for providing intermediate treatment other than it provides now. Now, [illegible] think we can proceed on that basis or do you suggest we have to clarify that and sharpen it up a little more?

MR. ATKINS: Well, I speak for the Public Health Service. [illegible] regular [illegible] I would certainly feel and concur with Mr. Walker's statements of this morning on providing secondary treatment as I understood it for all plants on the Virginia side at a commensurate rate, as you concluded in your summary, with the District of Columbia. Well, "commensurate" [illegible] I [illegible] was at the same time, so I would think [illegible] for all the conferees here to consider, but [illegible] we should have target dates on Arlington, Westgate, and on corrections necessary in Alexandria.

MR. [illegible]: Mr. Chairman, may I make this point, after [illegible] plan has been in operation, the very minute difference between the total contribution from Virginia and the District of Columbia is so small as to be insignificant [illegible] overall problem. We are talking [illegible] a great [illegible] this Westgate plant and on the question of secondary treatment in Arlington. The aggregate of the two [illegible], not too much greater than the relatively small portion of the D.C. sewage that will not be treated when your plan is completed. Isn't that true?

CHAIRMAN: Sir, I think you are precisely correct from an academic point of view, because I don't have any engineering background; but I think we have the same kind of situation in almost every large municipal complex where we have a large city on one side and a small one on the other.

We have the same situation up on the Missouri River in Omaha. Even if Omaha treats and gives reasonable treatment, under the circumstances, of their waste, after treatment their waste will greatly exceed what is coming out of Council Bluffs on the other side of the river, even though Council Bluffs provides no treatment whatsoever. Now, the question is under those circumstances, do we say that since a big city contributes more waste, Council Bluffs is privileged not to provide any treatment? I think under the law we have a theory here which has long been applied to these cases, saying that all contributors to such pollution are jointly and severally liable, and that is the theory which we have generally tried to follow in trying to get an equitable solution.

MR. WALKER: May be I didn't make my point clear. As I told you this morning, I'm well aware of that, but my point is that the percentage of untreated wastes coming out of Virginia, when these events occur, are not going to be greatly out of proportion in respect to the population of each area.

MR. ATKINS: According to the figures that I gave this morning, based on B.O.D., we figured that in 1964, with the District's improvements as planned and committed, they will be contributing 60 per cent of B.O.D.; Virginia, 40 per cent, which in my mind is a substantial portion.

MR. WALKER: I agree with you, but you are talking now of an immediate objective. I'm not talking about 1964. So far as I am concerned on the Virginia Water Control Board, I would not be willing to say we'll wait until 1964 to do this, but if you keep on belaboring the point and try to get a schedule from Virginia, I tell you now you can't get it.

CHAIRMAN: I'm trying to get everyone's views. I think what we can do, and let's see if we can get a summary statement which would be acceptable to Virginia on this problem, that recognizing the work that the Virginia communities are doing, and recognizing that the improvements that the District of Columbia has scheduled in the improvement of the Blue Plains plant and the proposed improvements to stop the storm water overflows, the policy of the Virginia State Water Board is to provide commensurate treatment, recognizing their responsibilities to keep the Potomac River and the Washington metropolitan area relatively free from pollution in accordance with the type of treatment provided by other communities.

MR. WALKER: I accept that one hundred per cent if you put back in the preamble, also recognizing the fact that

Virginia has thus far been way ahead of the District of Columbia.

CHAIRMAN: Well, sir, I would prefer to let the facts speak for themselves and indicate by the facts what Virginia has done.

MR. WALKER: Isn't that a fact?

CHAIRMAN: I think if we indicate that Virginia has provided secondary treatment in Alexandria and presumably secondary treatment in all these other places, I think the facts abundantly speak for themselves on that.

Wouldn't that be agreeable?

MR. WALKER: Well, it isn't fair to try to set up here a conclusion that Virginia is way behind on this program when it isn't and never has been.

CHAIRMAN: No one has suggested that.

MR. WALKER: Well, make it doubly clear that that's true and I'll be satisfied.

CHAIRMAN: Well, I think what we try to do in our summary, sir, is to have a factual summary.

MR. WALKER: Okay. There's nobody more anxious to be factual than I am.

CHAIRMAN: Well, we'll be very happy to indicate all the progress that Virginia has made.

Now, the next point and perhaps Mr. Brown might want to formulate this point, if you want it in the summary, is the summary as to Federal responsibility which we can accept as a recommendation of the conferees, if the non-Federal conferees agree.

MR. BROWN: Is this in the nature of a proposal or recommendation?

CHAIRMAN: A recommendation and conclusion or proposal.

MR. BROWN: I might state that the conferees reviewed the relative responsibility of the several jurisdictions and attempted to bring into relationship a relative responsibility on the part of the Federal government in achieving the overall correction needed. Recommend that processes be initiated to define what responsibility the Federal government would have in this program.

Is that satisfactory? Does Virginia want to associate themselves with that?

CHAIRMAN: Are there any other comments on that before we bring this to a close? We have had a summary statement on Maryland. Maryland either will provide for the disposal of its waste through arrangements with the District of Columbia for processing or will do that, and Maryland will make efforts to prevent the discharge of untreated or inadequately treated wastes into the area on the Potomac above the metropolitan area of Washington which appears to be developing into suburban housing.

Is that it?

40 MR. BROWN: Yes. Mr. Chairman, might I suggest that the record show that Maryland's accomplishment in this area is in the largest possible measure due to the initiative observed by the Washington Suburban Sanitary Commission in working out this excellent program with the District of Columbia for handling this very difficult problem in this area of Maryland.

CHAIRMAN: Thank you.

MR. ATKINS: Mr. Chairman, I would suggest it hasn't been discussed here before, but two or three items I think ought to be considered by the conference. One would be the continuous sampling program on the river. There is some routine done by various agencies, but to give continuous information on the quality of water, that's one point that has not been discussed. I am not suggesting that we include it in the summary of our discussion.

Another thing would be a statement of the effect on the water when these plants are completed and in effect and what are the water uses available for. The third one I'd suggest is something along the line of a progress report on sampling.

CHAIRMAN: I think we can put these out for discussion. Now I think the sampling is clear except to assign responsibility.

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MR. AULD: We've had a continuous program since 1938. We have added new sampling points to that, and have under consideration the extension of it even farther downstream and are now procuring equipment to set up free continuous sampling reports, samples 24 hours a day.

MR. ATKINS. I'm wondering and I know the sampling is done on the Virginia side, perhaps, and the results; and I wonder if Mr. Tisdale could comment on it. It seems to me there is right much data being collected, but if we had some way of the interested agencies getting the data--

MR. TISDALE: It is true that the Potomac Commission is working on a water sampling program. In fact, that has been going on a number of years through the cooperation of industry, counties, and cities and state agencies on the Potomac Basin. That work is being reorganized;to the extent that funds are available to the Commission, it will be carried on. It is now being extended upstream out of the range we are talking about here in the metropolitan area. With completion of improvements in the Cumberland area, a group in Maryland has indicated attention should be given there to water sampling, to testing, to measuring. We are getting cooperation from the jurisdiction in Virginia, in the Washington metropolitan area, in initiating sampling programs. I would say that we are making a start at that, but it is not adequate at the present time.

We'd be glad to try to expand it as funds become available.

CHAIRMAN: Unless Virginia has something to say on that, I think we might leave it at that.

MR. WALKER: I will only say we'd be very happy to have all the information that can be made available and will be happy to cooperate and provide samples taken from Virginia.

CHAIRMAN: Thank you. Now, the next point--I think we have generally developed this procedure in most conferences; that is, a mechanism where we can follow up and report progress. Generally we have set progress reports at six-month intervals so we can keep the Surgeon General advised, and the other conferees. Now it is suggested that we possibly might consider the same thing here. Our regional office could check with the state and interstate agencies concerned as to the progress and the recommendations and prepare a very short progress report for your information every six months. Would that be agreeable to all concerned?

Now I think we are about summarized unless there is some other point.

MR. AULD: This is not a quibble, but since you referred to Plan C and it is apparently accepted, I'd like to discuss what might later be a point of confusion. Plan C includes, among other things, Rock Creek which has no relation to Potomac pollution. Speaking just departmentally, it is not my intention to include Rock Creek work in any work we would undertake under Plan C. I should like that to be clear.

CHAIRMAN: All right. Thank you. Thank you very much for bringing that up. I think, considering the District of Columbia as a state, that Rock Creek is what we would call an intrastate stream and we would certainly have no jurisdiction over it in this conference.

Now, are there any other points or questions? I might say we want transcripts and summaries of the conference will be made available to the District of Columbia, Virginia, Maryland, the Interstate Commission, for distribution. Again let me emphasize we regard water pollution control as being within the primary responsibility and one of the primary rights of the states. These remedial measures and improvements will be carried on as far as possible under state and local law. Any folks who want more information on this can get a transcript of the summary and get in touch with their appropriate state agencies and with the Commission, and that will be available.

Thank you, folks, for coming. With that we can call the conference to a close. Thank you.

(Whereupon, the conference closed at 3:30 p.m., February 13.)